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## PROBABILISTIC APPROACH IN ROMANIAN FOREIGN TRADE STRUCTURE PREDICTION

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**Abstract.** This paper is a trial to test the advantages but also the limits of the Markov Chains used to predict the foreign trade structure of a certain group of products. Because of the relative lack of power of the chi-square test regarding the common way of testing the time stationarity of the transition probability matrix, we propose the use of the similarity coefficients, adapted for this specific situation. For applying the proposed methodology we use the foreign trade flows between Romania and other EU countries, detailed by product categories, from the Eurostat database, COMEXT. Because the algorithm is computingly intensive, a VBA program has been developed as a user friendly add-in for Excel.

**JEL Classification:** C53

**Keywords:** transition matrix, time homogeneity, forecasting error

### 1. Introduction

A certain realization of a stochastic process, when referring to a subset of the real number set representing time, gives birth to the more familiar concept of time series. When the state in one specific moment depends on the previous state we may talk about a class of processes called Markov Chains. A Markov chain is a discrete-time stochastic process with the Markov property, named after the mathematician Andrey Markov, stating that the conditional probability distribution of a state given the present and past states is a function of the present state alone. In such a process, the previous states are irrelevant for predicting the subsequent states, only the current state is needed. The Markov property means the system is "memory less", i.e. it does not "remember" the past states, just takes into account its present state on which the future state depends. The set of all possible values at a certain moment,  $t$ , is called *the state space* and the changes from one state to another are called *transitions*.

As a more formalized definition it could be said that a Markov chain is a sequence  $X_1, X_2, X_3, \dots$  of random variables with the property that the conditional

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probability distribution of the next future state  $X_{t+1}$  given the present and past states is a time invariant function of the present state  $X_t$  alone (Kemeny and Snell, 1976):

$$P[X_{t+1} = i_{t+1} / X_t = i_t, \dots, X_0 = i_0] = P[X_{t+1} = i_{t+1} / X_t = i_t] \quad (1)$$

By definition, a given sequence  $\{X_t, t = 0, 1, 2, \dots\}$  is an independent process if for all  $t, t = 0, 1, 2, \dots$  the probability law of the process is given by:

$$P[X_{t+1} = i_{t+1}, X_t = i_t, \dots, X_0 = i_0] = P[X_{t+1} = i_{t+1}] \cdot P[X_t = i_t] \cdot \dots \cdot P[X_0 = i_0],$$

or equivalently

$$P[X_{t+1} = i_{t+1} / X_t = i_t, \dots, X_0 = i_0] = P[X_{t+1} = i_{t+1}] \quad (2)$$

If the above condition does not hold, then determining the degree of dependency, that is, whether a given movement depends on the last movement, last two movements, etc. is of interest. If  $\{X_t, t = 0, 1, 2, \dots\}$  is a first order Markov chain, or simply a Markov chain, then the relation [1] holds. Generally, if  $\{X_t, t = 0, 1, 2, \dots\}$  is a Markov chain of order  $u$ , then  $X_{t+1}$  will depend on the previous  $u$  moments. Time dependence tests are used to find the order of a Markov process, i.e., to test for the order of time dependence.

Hence at any time  $t$ , a finite Markov chain of order one is completely characterized by the transition probability matrix whose elements are given by  $p_{ij} = P(X_{t+1} = j_{t+1} / i_t = a_t)$  which are independent of the time index  $t$ .

A considerable number of journal articles and books dealing with test statistics for Markov chains were published (Billingsley, 1961, Basawa and Prakasa, 1980).

Detailed information related to the estimation of the state transition probabilities and the testing of the Markov chain order may be found in Anderson and Goodman, 1957. An extensive evaluation of chi-square tests for the order of Markov Chains is realized by Guthrie and Youssef, 1970.

From a practical point of view if the state at a moment depends only on the previous state this doesn't mean that the other past states and their transitions are not needed as an algorithm input. Because in real world we do not expect to meet pure Markov chain processes we will have a different transition probability matrix for each moment  $t$ . However it is desirable that this matrix do not differ too much in time. This is the reason why one of the most important property of the transition probability matrix, especially regarding our forecasting purpose, is the behavior of this matrix over time, that is, the time homogeneity or time stationarity property.

Fielitz and Bhargava, 1973 and Fielitz, 1975 were aware of the importance of time homogeneity property for the prediction capacity of Markov chains and tested their applicability on the stock market. Related to the field of Markov chain applications we have to mention the important work of Iosifescu, 1980.

More recently Bickenbach and Bode, 2002, presents and propose chi-square tests of the Markov property, of spatial independence, and of homogeneity

across time and space to assess the reliability of estimated Markov transition matrices.

The small and large sample properties of Markov chain time dependence and time-homogeneity tests are evaluated by Tan and Yilmaz, 2000 .

One widely met procedure used in testing the time stationarity is by comparing the transition probability matrix of each sub-period to the average transition probability matrix of the entire tested period using the chi- square distribution for statistical inference, (Cochran, 1952) or the asymptotically equivalent likelihood-ratio (LR) test (Kullback et al, 1962).

Because of the relative lack of power of the chi-square based tests regarding this situation, in this paper we propose the use of similarity coefficients, adapted for this specific case. Because the null hypothesis testing is not the main objective in this case, an easily interpretable coefficient, meant to tell the final user if the process has enough stability to allow accurate forecasting, is more desirable, in our opinion, for prediction purposes.

## 2. Markov Chains and Exports Structure

Following our purpose of predicting the structure of foreign trade, the state space could be considered as being composed of all trade partners of a certain country or of all product groups exported by that country. We can define the trade percentage (or weight) of one product group in the total trade as being a structural element. The structure of trade by product groups is represented by the set of all these structural elements. A structural element at the moment  $t$  may be interpreted as the probability of being in a certain state at that particular moment. This interpretation of a structural element may be found also in Burtică, Vârlan, Stark-Eros and Kacso, 2002. For example if the percentage of chemicals in total imports for the year 2006 is 10% the chemicals represent a possible state and the probability to observe such a state is 0.1. Hence the structural element 10% may be viewed as a probability.

The structural elements may be represented as a (transposed) vector  $S_t' = [s_t^1, \dots, s_t^i, \dots, s_t^m]$ , where for each time index  $t = \overline{1, n}$  and for each element index  $i = \overline{1, m}$ ,  $s_t^i$  varies from 0 to 1 and for each  $t$  the sum of structural elements is 1,  $\sum_{i=1}^m s_t^i = 1$ .

The first difference is taken from the vector  $S_t$ :  $\Delta S_{t/t-1} = S_t - S_{t-1}$ . The structural elements of each difference vector  $\Delta S_{t/t-1}'$  have the property that the sum of positive values equals the absolute sum of negative values.

In the second stage *the transition matrices* are build for each pair of subsequent time periods,  $t/t-1$ . The transition matrices are square matrices of the form  $TR_{t/t-1}(m \times m)$ , where the principal diagonal elements are  $tr_{t/t-1}^{ii} = \min(s_t^i, s_{t-1}^i)$ ,  $i = \overline{1, m}$ . The other elements are obtained using the

formula:  $tr_{t/t-1}^{ij} = \Delta s_{t/t-1}^i \times \frac{\Delta s_{t/t-1}^j}{\sum_{i=1}^m \Delta s_{t/t-1}^i}$ ,  $\Delta s_{t/t-1}^i$  is negative and  $\Delta s_{t/t-1}^j$  is positive. In

this formula  $\sum_{i=1}^m +_{t/t-1}$  is the sum of positive values of the difference vector  $\Delta S'_{t/t-1}$ . The elements of  $TR_{t/t-1}(m \times m)$  may be represented in a more aggregate form as follows:

$$tr_{t/t-1}^{ij} = \begin{cases} \min(s_t^i, s_{t-1}^i), & \text{if } i = j \\ \Delta s_{t/t-1}^i \times \frac{\Delta s_{t/t-1}^j}{\sum_{i=1}^m +_{t/t-1}}, & \text{if } i \neq j \text{ and } \Delta s_{t/t-1}^i < 0 \\ & \text{and } \Delta s_{t/t-1}^j > 0 \\ 0, & \text{otherwise} \end{cases} \quad (3)$$

The transition probability matrices  $P_{t/t-1}(m \times m)$  are built in the third stage, again for each pair of subsequent time periods. Each element of a transition probability matrix is obtained by dividing the corresponding element (same  $ij$  position) of the transition matrix by the sum of the corresponding line:

$$P_{t/t-1}^{ij} = \frac{tr_{t/t-1}^{ij}}{\sum_{j=1}^m tr_{t/t-1}^{ij}} \quad (4)$$

The fourth stage of the Markov structural forecasting algorithm introduces the core concept of the procedure, that is *the expected transition probability matrix*,  $\hat{P}$ . This matrix is computed as an average of the transition probability matrices throughout the whole time span ( $n$  periods and  $n-1$  transition probability matrices),

$\hat{P}^{ij} = \frac{\sum_{t=2}^n P_{t/t-1}^{ij}}{n-1}$ . The importance of this matrix is due to its direct implication in extrapolation.

In the final stage we obtain the forecasted structural elements for  $k$  periods ahead by multiplying the transposed expected matrix  $\hat{P}'$ , raised to the power of  $k$ , by the vector of structural elements for the last period:

$$\hat{S}_k = (\hat{P}')^k \times S_n. \quad (5)$$

For many practical reasons,  $\hat{P}$  may be computed by covering a sub-period or it could be computed by giving more weight to a period considered to be more relevant or more significant for the forecasting horizon. The decision on the

most appropriate way of computing the expected  $\hat{P}$  could be based on the expertise in the field or on statistical testing. The last approach is considered in our algorithmic method.

## 2.1 Testing for Time Homogeneity

Testing time-dependency together with time-homogeneity introduces some challenges for Markov chain based tests. However Markov chain time-dependence test requires that the Markov chain associated with the time series under investigation is time-homogenous. That is, it is required that the transition probability matrix do not change significantly over time. Assuming a time dependence of order one we will focus on studying the time homogeneity of the transition probability matrix.

In our approach we shall use two coefficients forced to vary in the (0,1) and, respectively, (-1,1) intervals.

The first coefficient is an adaptation of the (Finger-Kreinin, 1979) similarity index. The first trial in this direction has been made by Golet and Vârlan, (2006). The coefficients for each pair of compared transition matrices form the proximity matrix which is a  $(T-1) \times (T-1)$  square matrix whose elements are:

$$FG_{t,s} = 1 - \frac{\sum_{ij} |p_{t/t-1}^{ij} - p_{s/s-1}^{ij}|}{m}, \quad (6)$$

$$t, s = \overline{1, T-1}.$$

The final indicator,  $\overline{FG}$ , is the average of the proximity matrix coefficients and characterize the whole studied time span. The index varies from 0 to 1 (1 meaning maximum similarity) hence being very easily to interpret.

The indicator may also be computed as proximity between the transition probability matrices and the expected transition probability matrix which is closer to the chi-square concept:

$$FG_t = 1 - \frac{\sum_{ij} |p_{t/t-1}^{ij} - \hat{P}_{ij}|}{m}.$$

The second proposed coefficient is an adaptation of the Hamann distance for binary data. The transition matrices, representing probabilities, are formed only from positive numbers, no negative numbers being in their structure. We have considered that the two transition matrices are similar from a structural point of view if the null and strictly positive values are distributed on the same positions. We used the following formula

$$H_{t,s} = \frac{(a+d) - (b+c)}{a+b+c+d}, \quad t, s = \overline{1, T-1}, \quad (7)$$

$a, b, c, d$  - represent frequencies as follows:

$t \backslash s$	0	+
0	a	b
+	c	d

$s, t$  - the compared transition matrices, one for the period  $t$  (transition from  $t-1$  to  $t$ ) and one for the period  $s$  (transition from  $s-1$  to  $s$ ).

The final indicator is, as in the first case, the average of all period combinations and will be denoted by  $\overline{H}$ . The index varies from -1 to 1 (1 meaning maximum structural similarity and -1 maximum structural dissimilarity).

Comparing the probability matrix over time, using both methods, different results may be obtained. The difference in interpretation is due to the different nature of these two indicators. While  $\overline{FG}$  shows only the absolute change and is mainly related with the dimension of the forecasting error,  $\overline{H}$  largely penalize the lack of uniformity in change and is mainly related with the directional forecasting error.

## 2.2 Testing the Methodology on Foreign Trade

For applying the methodology, the Eurostat database, COMEXT, have been used. The data used represent the Eurozone exports to Romania (imports from the Romanian point of view) by sections of SITC from 2000 to 2006 (Table 2.1).

The computed indicators for the period 2000-2006 regarding the time homogeneity of the transition probability matrix are:  $\overline{FG} = 0.8$  and  $\overline{H} = 0.34$ . Even if the value of  $\overline{H}$  and  $\overline{FG}$ , (Table 2.5) is positive we consider it too low and draw the conclusion that the transition probability matrix (Table 2.2) is not enough stable for this period and, as a consequence, the expected (average) transition matrix is not representative for the period 2000-2006.

Table 2.1 Trade shares (%) of Romanian imports from Eurozone according to SITC divisions

SITC	2000	2001	2002	2003	2004	2005	2006
0	2.61	3.07	3.01	2.79	2.78	2.90	2.94
1	0.51	0.59	0.49	0.48	0.45	0.76	0.69
2	1.42	1.02	1.18	1.20	1.09	1.22	1.40
3	1.53	1.26	0.59	0.52	0.40	0.60	0.75
4	0.22	0.22	0.35	0.18	0.20	0.17	0.14
5	9.13	9.29	10.41	9.49	9.68	9.71	10.10
6	29.17	29.34	29.84	29.20	27.30	25.14	23.47
7	37.50	36.83	35.59	38.49	41.72	44.64	46.96
8	16.74	17.40	17.61	16.88	15.76	14.13	12.78
9	1.17	0.98	0.92	0.77	0.62	0.72	0.76

Source: Eurostat

(0 - Food And Live Animals, 1 - Beverages And Tobacco, 2 - Crude Materials, 3 - Mineral Fuels, 4 - Animal And Vegetable Oils And Waxes, 5 - Chemicals And Related Products, 6 -

Manufactured Goods , 7 - Machinery And Transport Equipment, 8 - Miscellaneous Manufactured Articles, 9 - Commodities And Transactions)

Table 2.2. The Expected Transition Probability Matrix,  $\hat{P}$

SITC	0	1	2	3	4	5	6	7	8	9
0	0.984	0.000	0.000	0.000	0.000	0.002	0.001	0.013	0.000	0.000
1	0.000	0.944	0.003	0.001	0.002	0.016	0.006	0.026	0.003	0.000
2	0.014	0.002	0.939	0.000	0.000	0.006	0.005	0.014	0.020	0.000
3	0.009	0.002	0.007	0.822	0.006	0.053	0.024	0.056	0.022	0.000
4	0.001	0.001	0.003	0.002	0.873	0.004	0.000	0.115	0.000	0.001
5	0.000	0.000	0.000	0.000	0.000	0.985	0.000	0.015	0.000	0.000
6	0.001	0.001	0.001	0.001	0.000	0.002	0.961	0.032	0.000	0.000
7	0.001	0.000	0.000	0.000	0.000	0.003	0.002	0.991	0.002	0.000
8	0.001	0.001	0.002	0.002	0.000	0.003	0.000	0.042	0.949	0.001
9	0.008	0.001	0.001	0.000	0.001	0.010	0.006	0.057	0.013	0.903

Table 2.3 Forecasted trade shares of Romanian imports from Eurozone according to SITC divisions

SITC	2002	2003	2004	2005	2006
0	3.47	2.96	2.58	2.78	3.01
1	0.66	0.42	0.46	0.43	1.05
2	0.74	1.31	1.21	0.99	1.33
3	1.03	0.27	0.47	0.30	0.79
4	0.22	0.45	0.09	0.21	0.16
5	9.43	11.31	8.64	9.86	9.73
6	29.49	30.24	28.58	25.52	23.15
7	36.17	34.40	41.14	44.69	47.30
8	17.97	17.78	16.18	14.72	12.67
9	0.83	0.86	0.64	0.50	0.81

We also have considered that the most relevant information for the forecast horizon is whether a certain section of SITC will be going up or down as a percentage of total imports, this is to say the directional forecast. Because  $\bar{H}$  is related with the directional forecast we have considered it the most important from this point of view.

From the values of  $FG_{t,s}$  and  $H_{t,s}$  (Table 2.4 and 2.6) it can be noticed that there is relatively more similarity between the transition matrices in subsequent periods. As a test, we will forecast (Table 2.3) each year structure using the last observed transition matrix (the structure for the year 2006 is estimated using the transition matrix  $P_{2005/2004}$ , for 2005 by using  $P_{2004/2003}$  and so on). The percentage of directional successes for the period 2000-2006 is 66% which is quite satisfying (above 50% pure chance).

Table 2.4 The proximity matrix between the transition matrices ( $FG_{t,s}$  values)

Period	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
2000-2001	1	0.79169	0.7239	0.822	0.8149	0.786
2001-2002	0.7917	1	0.6811	0.775	0.7812	0.775
2002-2003	0.7239	0.68107	1	0.801	0.8031	0.811
2003-2004	0.8224	0.77486	0.8014	1	0.8503	0.842
2004-2005	0.8149	0.7812	0.8031	0.85	1	0.957
2005-2006	0.7864	0.77517	0.8114	0.842	0.9565	1

Table 2.5 The proximity of the transition matrices regarding the expected transition matrix ( $FG_t$  values)

Period	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
	0.8446	0.80875	0.8291	0.877	0.8872	0.89

Table 2.6 The structural proximity between the transition matrices ( $H_{t,s}$  values)

Period	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
2000-2001	1	0.5	0.2	0.34	0.1	0.04
2001-2002	0.5	1	0.34	0.4	0.08	0.1
2002-2003	0.2	0.34	1	0.5	0.5	0.52
2003-2004	0.34	0.4	0.5	1	0.32	0.34
2004-2005	0.1	0.08	0.5	0.32	1	0.82
2005-2006	0.04	0.1	0.52	0.34	0.82	1

Theil's  $U$  test is used in order to compare the accuracy of the proposed method with the naive forecast (the structure of the current moment is considered as a forecast for the next moment).

The value for the Theil's  $U$  is below 1 (0.76). The general formula (Makridakis, 1998) for this error indicator is as follows:

$$Theil's\ U = \sqrt{\frac{\sum_t \left( \frac{\hat{Y}_{t+1} - Y_{t+1}}{Y_{t+1}} \right)^2}{\sum_t \left( \frac{Y_t - Y_{t+1}}{Y_{t+1}} \right)^2}}$$

$\hat{Y}_{t+1}$  - forecasted value for the moment  $t+1$

$Y_{t+1}$  - real value for the moment  $t$ .

Theil's  $U$  allows the following interpretation:

- If Theil's  $U > 1$  the tested method performs poorer than the naïve use of the present values as forecasts
- If Theil's  $U = 1$  the performance of the tested method is the same as the naïve forecast
- If Theil's  $U < 1$  the performance of the tested method is better than the performance of the naïve method

Because the algorithm is computationally intensive a user friendly VBA add-in for Excel has been realized. The add-in is easy to use and may be requested from the authors. Because the most important international databases offer trade statistics downloadable in Excel format we considered that an add-in for Excel is the best solution.

### 3. Conclusion

In this paper we have introduced two methods of testing the time homogeneity of the transition matrix. The two methods are not overlapping but instead represent two different approaches to the concept of proximity: absolute distance and structural difference. The build indicators are fully informative and easily to interpret. Testing realized until now show promising results but of course further testing is beneficial. The time dependence of the Markov process represents also an objective for future research (the Markov process has been assumed to be of order one in this paper).

The realized add-in is a very useful tool in forecasting and also permits the testing of the proposed methodology. However some improvements could be done mainly in the direction of new forecasting accuracy tests which are not currently implemented. An additional option to allow the introduction of the transition matrix based on judgmental reasons might also be helpful for the final user.

We have tested this method on trade data, mainly because they are easily available, but we hope that forecasting the market share at brand or company level, by the proposed methodology, is also a reachable objective.

### References

- Anderson T., Goodman L. (1957). "Statistical Inference about Markov Chains", *Annals of Mathematical Statistics*, vol. 28, nr. 1, p. 89-112
- Basawa B., Prakasa Rao (1980). *Statistical Inference for Stochastic Processes.*, Academic Press, New York
- Bickenbach F., Bode E. (2002). "Markov or not Markov – This should be a question", *Proc. of the 42nd Congress of the European Regional Science Association*, Dortmund, p.345-459
- Billingsley P. (1961). *Statistical Inference for Markov Processes*, University of Chicago Press
- Burtică G., Vârlan L., Stark-Eros L., Kacso S. (2002). *Previziune economică. Teorie și Aplicații*, Editura Orizonturi Universitare, Timișoara

- Cochran W. (1952). "The  $\chi^2$  Test of Goodness of Fit", *Annals of Mathematical Statistics*, vol. 23, p.315–345
- Fielitz B. (1975). "On the Stationarity of Transition Matrices of Common Stocks", *Journal of Financial and Quantitative Analysis*, vol. 10, p. 327-339
- Fielitz B., Bhargava T. (1973) "The Behavior of Stock-Price Relatives: A Markovian Analysis", *Operations Research*, vol. 21, p. 1183-1199
- Finger E., Kreinin T. (1979). "A measure of 'export similarity' and its possible uses", *Economic Journal*, vol. 89, p. 905-1000
- Goleț G., Vârlan L. (2006). "Markov Chains Forecasting of Export Structure", *Proc. of Pannonian Applied Mathematical Conference, Bull. for Appl. and Comp. Math of the Budapest University of Technology and Economics*, vol. 45, nr. 7, p.154-167
- Guthrie D., Youssef M. (1970). "Empirical Evaluation of Some Chi-Square Tests for the Order of a Markov Chain", *Journal of the American Statistical Association*, vol. 65, p. 631-634
- Iosifescu M. (1980). *Finite Markov Processes and Their Applications*, Chichester: John Wiley
- Kemeny J., Snell L. (1976). *Finite Markov Chains*, Springer-Verlag, New York
- Kullback S., Kupperman S., Ku H. (1962). "Tests for Contingency Tables and Markov Chains", *Technometrics* vol. 4, nr. 4, p. 573–608
- Makridakis S. (1998). *Forecasting Methods and Applications*, John Wiley & Sons, Inc. 3 th ed.
- Tan B., Yilmaz K. (2000). "Markov Chain Test for Time Dependence and Homogeneity: An Analytical and Empirical Evaluation", *European Journal of Operational Research*, vol. 47, nr.5, p.234-247

## THE PRACTICAL APPLICATION OF DISCOUNTED CASH-FLOW BASED VALUATION METHODS

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**Abstract.** Valuation methods based on Discounted Cash-Flow (DCF) play a major role in the field of company valuation. The current literature contains a reasonably deep and detailed theoretical basis for DCF-based valuation, although, when starting to apply the techniques to evaluate a real company, some practical problems may appear. This study summarizes the most important practical difficulties which may hinder the valuation process and proposes different ways of solving these. Beyond the theoretical discussion, the author illustrates the techniques with a case-study, using the financial figures of a fictive firm.

**JEL Classification:** G30

**Keywords:** company valuation, discounted cash-flow methods

### 1. The general DCF model

The discounted cash-flow models interpret a firm's value as the present value of cash-flow generated by the firm in a specified future period. Future cash-flow should be discounted at an appropriate discount rate, but these methods require a very careful forecast of the flows for each future period.

The calculation formula depends on whether the company has been established for a specific term only (project companies) or for an indefinite period of time.

#### *a) Valuation of project companies*

A project company is established for a specified task and for a definite time period. After closing its operations, liabilities are settled and the remaining assets are sold, creating an additional cash inflow for the shareholders. Therefore, the valuation is based on the following formula:

$$V_0 = \frac{CF_1}{1+r} + \frac{CF_2}{(1+r)^2} + \dots + \frac{CF_n + RV_n}{(1+r)^n} = \sum_{i=1}^n \frac{CF_i}{(1+r)^i} + \frac{RV_n}{(1+r)^n} \quad (1)$$

where  $V_0$ : value of the firm in period 0

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$CF_i$  ( $i=1,2,\dots,n$ ): estimated cash-flow for period  $i$   
 $r$ : appropriate discount rate matched with the cash-flows' risk  
 $RV_n$ : residual value of the firm at the end of period  $n$   
 (net cash inflow from selling the assets)

*b) Valuation based on the going concern*

In the normal case, a company is established to operate in an indefinite future. According to the *going concern*, we should always assume that the firm will continue its operations in the future. Therefore, the previous formula should be modified as follows:

$$V_0 = \frac{CF_1}{1+r} + \frac{CF_2}{(1+r)^2} + \dots + \frac{CF_i}{(1+r)^i} + \dots = \sum_{i=1}^{\infty} \frac{CF_i}{(1+r)^i} \quad (2)$$

In order to correctly apply the above formulae we have to make it clear

- how we calculate the 'cash-flow' for each period
- what is the 'discount rate' used to compute the present value of the flows.

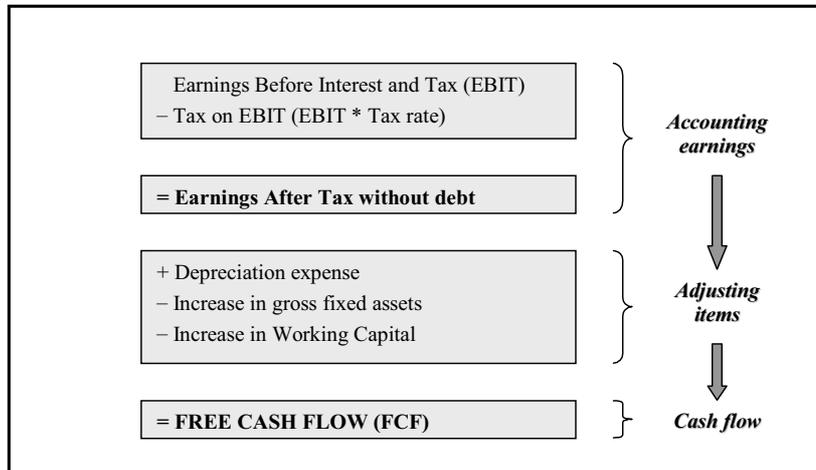
The relevant literature has elaborated many different discounted cash-flow techniques, the most generally applied of which is the so-called *Free cash-flow model*. According to (Fernandez, 2002), the most important types of cash-flow are the Free cash-flow (cash-flow available to satisfy both the shareholders' and creditors' return requirements), the Equity Cash-flow (cash-flow available for shareholders) and the Debt Cash-flow (cash-flow available for creditors).

Free cash-flow (FCF) is the cash-flow generated by the firm in the current period, without taking into account the effect of debt financing. It is the money which would be available within the firm assuming that there is no debt and, therefore, that there are no interest expenses. Using another approach, we could say that Free cash-flow is the amount of cash available for the company before the payment of any instalments due and of interest on the debt and before the payment of dividends to shareholders. The calculation of FCF can be done according to the formula shown by *Figure 1* (based on Copeland, Murrin and Koller, 2000, Fernandez, 2002, and Agar, 2005).

Initially, we need to determine *Earnings Before Interest and Tax (EBIT)*, which represents hypothetical earnings before tax which ignores the effect of interests paid on debt. It can be calculated as the reported earnings before tax plus the interest expense stated in the income statement (Bodie, Kane and Marcus, 2004).

The EBIT should then be reduced by the *hypothetical tax* (computed as  $EBIT * tax\ rate$ ) in order to obtain *Earnings After Tax without the effect of debt financing*. This number shows the accounting profit which would have been realized had the firm used no debt to finance its operation.

Figure 1. Calculation of the Free Cash Flow



Source: based on Copeland, Murrin and Koller, 2000, Fernandez, 2002 and Agar, 2005

Finally, we need to consider some adjustments to convert accounting earnings into cash-flow. The most important items for adjustment are:

- First, the depreciation expense recorded for the current period (and therefore contained in EBIT) should be added, as this is merely a theoretical expense expressing the physical deterioration or the obsolescence of assets which is matched by no actual cash outflow.
- Second, the increase in gross fixed assets, which represents the cash invested into new long-term assets, should be deducted. The reason for this adjustment is that these cash outflows are not part of the EBIT (that is, they were not recorded as an expense but as an increase in assets).
- Third, similarly to fixed assets, the increase in *working capital* should also be deducted, since changes in working capital represent cash receipts and payments, although they do not affect the EBIT (that is, they are not recorded as revenue or expenses).

At this point, it is very important that we have a clear definition of working capital. To illustrate the real content of this, *Fernandez* proposes to modify the accounting balance sheet and convert it into an 'economic balance sheet'. The economic balance sheet only differs from a normal balance sheet in that it presents the non-interest-bearing current liabilities on the left-hand side, among assets, as negative components of working capital. In consequence, the right-hand side contains shareholders' equity and interest-bearing liabilities, which *Fernandez* terms 'financing liabilities'. The structure of the 'economic balance sheet' is shown in *Figure 2*.

As the figure shows, working capital can be defined as the difference between non-cash current assets and non-interest-bearing liabilities. After making the necessary adjustments to the hypothetical earnings after tax, we obtain the Free cash-flow for the given period.

Figure 2. The structure of the 'economic balance sheet'

<i>Economic balance sheet</i>	
<i>Assets</i>	<i>Equities</i>
<i>Fixed Assets</i>	<i>Shareholders' Equity</i>
<i>Working Capital Requirements (WCR) *</i>	<i>Financing liabilities (interest-bearing debt)</i>
<i>Cash</i>	

\* *WCR = Current Assets – Cash – Non-financing liabilities*

Source: based on *Fernandez, 2002*

The next question is the appropriate discount rate to be applied for the present value calculation. As defined earlier, Free cash-flow is the amount of cash available in the company before the payment of any instalments and interest due to creditors - and before the payment of dividends to shareholders. To discount these flows we need to use the *Weighted Average Cost of Capital (WACC)*, as this is the rate representing the return requirements of both groups of capital providers (shareholders and creditors). Based on the well-known Capital Asset Pricing Model (CAPM), the WACC is computed according to the following formula (see i.e. *Bélyácz, 2001*):

$$WACC = w_e K_e + w_d K_d (1 - T) \quad (3)$$

In this equation,  $w_e$  and  $w_d$  stand for the weights of equity and debt in the financing structure. Using  $E$  to represent Equity and  $D$  to represent Debt (the 'financing liabilities' according to the economic balance sheet), their calculation is:

$$w_e = \frac{E}{E + D} \quad (4)$$

$$\text{and } w_d = \frac{D}{D + E} \quad (5)$$

The  $K_e$  and  $K_d$  variables represent the returns required by shareholders and creditors respectively. In most cases,  $K_d$  is identified with the average, before-tax interest rate payable on the debt, whilst the shareholders' return requirement ( $K_e$ ), based on the CAPM, is calculated as follows [*Fernandez, 2005*]:

$$K_e = R_F + \beta_L (R_M - R_F) \quad (6)$$

where  $R_F$  stands for the risk-free rate and  $R_M$  for the market return, ( $R_M - R_F$ , therefore, showing the market premium), while  $\beta_L$  is the company-specific *beta*

*coefficient* expressing the relationship between the (leveraged) company's return and the market return.

Finally, it should be noted that, in the WACC formula  $K_d$  is multiplied by  $(1-T)$  which is due to the tax-shield resulting from the fact that interest expenditure decreases in earnings before tax, so saving income tax.

To summarize, WACC shows an average return requirement required by all capital providers, and so it is matched with the risk taken both by the shareholders and by the creditors. It is, therefore, the appropriate rate to be applied to discount future Free cash-flow.

## 2. Practical problems of DCF methods

When we start to convert theory into practice, we may meet some problems which hinder the application of the original DCF models. To illustrate these difficulties, we should assume that we have to determine the value of a company established for an indefinite period, based on the Free cash-flow model. Furthermore, we need to assume that we have all the necessary financial figures and market information, so making it possible to determine the FCF and the WACC for the current period. In the simplest case, and on a going-concern basis, the company's value can be computed according to the perpetual annuity formula:

$$FirmValue = \frac{FCF}{WACC} \quad (7)$$

This way of calculation poses at least three problems which I would summarize as follows:

- 1) The financial statements available at valuation relate to past accounting periods. This means that, based on the formula earlier presented, we are only able to determine the FCF for accounting periods already closed. However, *to estimate the company's value, we need to know the Free cash-flow for future periods.*
- 2) The same problem applies to the cost of capital, due to the fact that *future Free cash-flow should be discounted by future WACC values.* This may be problematic since we have no precise information concerning the capital providers' return requirements and of the company's future capital structure.
- 3) The third problem is that the perpetual annuity formula estimates company value based on the Free cash-flow and the WACC of one single period. However, it is obvious that, due to different internal and external factors, the cash-flow and the cost of capital cannot be regarded as constant over time. Internally, there are various factors which can be influenced by the company, such as pricing policy, cost efficiency, expansion strategy, diversification or concentration. Beyond these, external factors such as trends in the national and international economy and changes in the taxation system, may have an effect on the firm's cash-flow and on the cost of capital.

## 2. 1. Estimation of future Free cash-flows

To solve the first problem, we can choose from different options. As we have no exact accounting information for the future, we need to find a way to estimate cash-flow.

One possible solution is to forecast the figures of the balance sheet and of the income statement, from which the Free cash-flow can be calculated according to the formula presented in *Figure 1*. This is only possible if the valuator has an insight into the company, since, to have precise forecasts for future revenue and expenditure, we should know the firm's strategy.

The other possibility is by using a statistical method, namely by extrapolating past trends. This means that we have to examine the progression of the free cash-flow in the past and then to build up a trend function, based on which future flows can be estimated. It is a very comfortable solution, although it can only be applied if the company operates in a stable and predictable environment (with the basic assumption that past trends will be continued in the future).

## 2. 2. Determining the discount rate

The second problem relates to the discount rate. At a specified point in time the WACC formula (shown earlier) can be applied without difficulty (given that the shareholders' and the creditors' return requirements are known) and the respective weights of equity and debt can easily be computed from balance sheet figures. However, to estimate return requirements for the future is quite difficult, and, furthermore, we do not know the future capital structure. To mitigate the problem of estimation, therefore, valuers often choose a more practical way of calculation, according to which the discount rate is computed as the sum of a *base rate* and a *risk premium* [Ulbert, 1994]:

$$\text{Discount rate} = \text{Base rate} + \text{Risk premium} \quad (8)$$

The base rate is intended to express the normal (risk-free) return that can be realized by the company, while the risk premium represents estimating various risks over the long-term. Some typical components of the base rate and risk premium can be seen in *Table 1*.

Table 1. Determining the discount rate

<b>Rate</b>	<b>Factors to be considered</b>
<b>Base rate</b>	<ul style="list-style-type: none"> <li>▪ the national central bank's base rate</li> <li>▪ inflation rate</li> <li>▪ national GDP growth</li> <li>▪ normal return in the industry</li> <li>▪ interest rate of long-term government bonds</li> <li>▪ etc.</li> </ul>
<b>Risk premium</b>	<ul style="list-style-type: none"> <li>▪ estimation risk</li> <li>▪ country risk</li> <li>▪ company-specific risk</li> <li>▪ force majeure.</li> </ul>
<b>Discount rate</b>	<i>Base rate + Risk premium</i>

Source: based on Ulbert, 1994

### 2. 3. The solution to the Perpetual Annuity Problem

The third problem of practical application comes from the basic formula stated in (7), which calculates with constant cash-flow and with an unchanged discount rate for the entire (indefinite) forecast period. It is obvious that cash-flow and cost of capital will continuously change over time, and this needs to be taken into consideration when estimating the company's value. As a possible solution to the problem, the *constant growth model* and the so-called *phase methods* are suggested by professionals. These methods accept the concept that an indefinite future period should be the basis of the valuation process, although they refute the assumption that cash-flow and discount rates are constant over time.

The *constant growth DCF model* may be useful for companies which have a stable level of annual earnings, which do not achieve outstanding results, but whose profits are continuously growing (Damodaran, 1994). In such cases, the company's value can be computed based on the growing annuity formula, as follows:

$$FirmValue = \frac{FCF}{WACC - g} \quad (9)$$

where  $g$  denotes the annual rate of growth. As this formula is still very simplified, it can only be used by firms which have a relatively stable growth-rate during their entire life-cycle. Furthermore, Damodaran emphasises that the estimation will only be reliable if the firm has an average company-specific risk and a relatively stable financing structure (Damodaran, 1996).

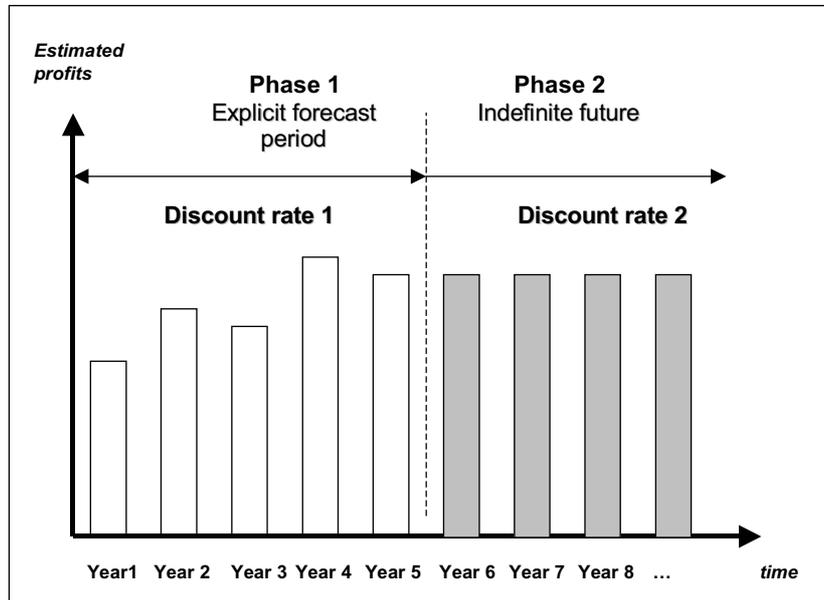
A more finely-tuned solution is provided by *phase methods*, which divide the company's future into different sectors or phases. In each phase, we can use different cash-flow, base rates and risk premiums so as to have a more precise estimation.

With the *two-phase method*, which originates from Damodaran's growing dividend model (Damodaran, 2002), the firm's future is divided into the following two phases:

- **Phase 1. (explicit forecast period):** This is defined as the first five years after the current year. Realistic cash-flow expectations can be constructed for these years. These can be based on contracts already signed, market research, industry trends etc. The estimated future cash-flow should be discounted using a carefully selected discount rate, consisting of a base interest rate and a risk premium. As the estimation risk over the first five years (which is regarded as the 'near future') is moderate, the applied risk premium is usually relatively low.
- **Phase 2. (indefinite future):** This is an indefinite period starting at the end of Phase 1 – that is, at the beginning of Year 6. We assume that, from this point on, a constant amount of cash-flow will be realized, equal to the CF estimated for Year 5. The risk premium applied for this phase is usually higher than for the first phase, the reason being that the uncertainty involved in estimating the distant future is higher than that of short-term expectations..

A graphical summary of this method can be seen in Figure 3 (based on Takács, 2003).

Figure 3. The logic of the two-phases method (Takács, 2003)



To determine the present value of the cash-flow of Phase 1, the classic Present Value Formula is applied, whilst in respect of Phase 2 we use the Perpetual Annuity Formula. The result obtained will be the present value of the profits of the second phase in terms of the fifth year's values, and so this number should be further discounted by the fifth year's discount factor. The value of the company, therefore, is estimated according to the following formula:

$$FirmValue = \sum_{t=1}^5 \frac{FCF_t}{(1+r_1)^t} + \frac{FCF_5/r_2}{(1+r_1)^5} \quad (10)$$

where  $FCF_t$ : estimated free cash-flow for period  $t$   
 $r_1$ : discount rate for Phase 1 (estimated WACC)  
 $r_2$ : discount rate for Phase 2 (estimated WACC)

A still more sophisticated technique is the *three-phase method*. In this case, when estimating the company's value, we should distinguish three separate periods in the firm's future (Ulbert, 1994):

- **Phase 1. (explicit forecast period):** The first three years after the current year, for which relatively precise cash-flow anticipations can be made. We use a base interest rate plus a relatively low risk premium as a discount rate.
- **Phase 2. (extrapolation of Phase 1.):** To estimate the cash-flow of the following 5 years (years 4-8), we simply extrapolate the tendencies of the first Phase. The simplest way to do this is to determine the *average change* between year 1 and year 3. This can be calculated as:

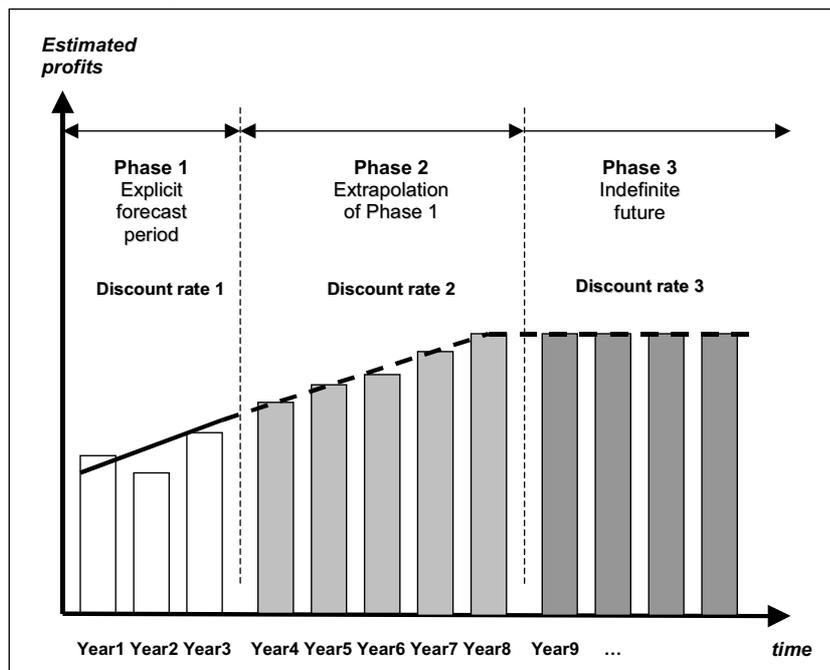
$$D = (\text{Cash Flow Of Year 3} - \text{Cash Flow Of Year 1}) / 2 \quad (11)$$

Using this number, we can assume that, after Year 3, profits will increase by  $D$  every year until Year 8. For discounting these profits, a risk premium higher than that applied for Phase 1 should be used.

- **Phase 3:** The indefinite period after Year 8. Similarly to the two-phase method, we assume that, starting from Year 9, the same cash-flow obtained in year 8 will be realized annually. To capitalize these flows, we use the Perpetual Annuity formula. This gives a present value in terms of the eighth year's values and should, therefore, be discounted again by the discount factor of year 8.

The logic of the method is shown by Figure 4 (based on Takács, 2003).

Figure 4. The logic of the three-phases method (Takács, 2003)



It should be noted that, for discounting the cash-flow of different years, we have to use 'mixed' discount factors. This is because  $r_2$  (the discount rate of Phase 2) is applied only from year 4, the rate for the first three years remaining  $r_1$ . For example, the discount factor for the cash-flow of year 5 will be  $(1+r_1)^3(1+r_2)^2$ .

Assuming the use of the free cash-flow model and the three-phase method, the company's value is computed by means of the following formula:

$$FirmValue = \sum_{i=1}^3 \frac{FCF_i}{(1+r_1)^i} + \sum_{j=4}^8 \frac{FCF_j}{(1+r_1)^3(1+r_2)^{j-3}} + \frac{FCF_8/r_3}{(1+r_1)^3(1+r_2)^5} \quad (12)$$

where  $FCF_i, FCF_j$ : estimated free cash-flow for year  $i$  and year  $j$   
 $r_1, r_2, r_3$ : discount rates applied in the different phases  
 (estimated WACC)

#### 2. 4. Combined net asset value/DCF methods

Discounted cash-flow-based methods are often combined with net asset-value- (book-value) based methods. The actual book-value of the company (computed as total assets minus total liabilities) shows the amount of money which would be realized by the immediately sale of the company's assets and the settlement of all its liabilities. This amount only represents the daily value of the company and does not take into consideration the future cash-flow generating ability. Consequently the book-value usually produces a significantly lower value than by DCF methods, even though there are no uncertainties in the valuation process. To find a compromise between the two approaches (to consider the future cash generating ability whilst at the same time mitigating the risk involved in estimation) experts suggest computing the company's value as a weighted average of the DCF and book value:

$$Company Value = w * DCF value + (1-w) * Book value \quad (13)$$

In the literature different opinions can be seen concerning the weightings of DCF values ( $w$ ) and book values ( $1-w$ ). The *Schmalenbach method* suggests that these should be 50%-50% in order to give the two components identical importance [Takács, 2003]. However, many experts think that the DCF value should be regarded as more important than the book value. Practical examples of this are the *Swiss method*, where the weighting of the DCF value is double that of the book value ( $w=2/3$ ) [Ulbert, 1994], or the *Stuttgart method*, where  $w=62\%$  [Dittmann, Maug and Kemper, 2002].

#### 3. An illustrative sample case

To illustrate the practical application of the DCF methods, let us take a fictive company, *Sample Ltd*. We would like to determine the company's value based on the financial statements of the last two years. We assume that we have already completed a preliminary analysis and have concluded that the firm's financial position is sound, with growing earnings and with positive forecasts for the future. Balance sheet figures and the income statement for the last two years are shown in Tables 2 and 3.

Table 2. Sample Ltd. Balance sheet, 31 December (in \$1,000)

	<i>Previous year</i>	<i>Current year</i>
<b>Fixed Assets</b>	<b>66 448</b>	<b>71 666</b>
Inventories	14 308	13 570
Receivables	10 655	13 014
Marketable securities	0	0
Cash and equivalents	5 562	6 395
<b>Total current assets</b>	<b>30 525</b>	<b>32 979</b>
<b>TOTAL ASSETS</b>	<b>96 973</b>	<b>104 645</b>
<b>Shareholders' equity</b>	<b>60 397</b>	<b>68 732</b>
Long-term liabilities	23 676	21 533
Current liabilities	12 900	14 380
<i>*including: non-financing current liabilities</i>	7 355	8 046
<b>Total liabilities</b>	<b>36 365</b>	<b>35 545</b>
<b>TOTAL SHAREHOLDERS' EQUITY &amp; LIABILITIES</b>	<b>96 973</b>	<b>104 645</b>

Table 3. Sample Ltd. Income statement, year ended 31 December (in \$1,000)

	<i>Previous year</i>	<i>Current year</i>
Sales revenue	64 748	75 083
Cost of sales and operating expenses	43 584	48 543
<i>*including: depreciation</i>	5 467	5 811
<b>Operating income</b>	<b>21 164</b>	<b>26 540</b>
Financial revenue	6 422	7 512
Financial expenses	3 374	3 016
<i>*including: interest</i>	2 634	2 452
<b>Income before tax</b>	<b>24 212</b>	<b>31 396</b>
Income tax liability (20%)	4 842	6 279
<b>Income after tax</b>	<b>19 370</b>	<b>25 117</b>

I propose to show estimations of the company's free cash-flow-derived value in five different versions, using

- (a) the Perpetual Annuity model,
- (b) the Growing Annuity model,
- (c) the Two-Phase method,
- (d) the Three-Phase method, and
- (e) the Combined Book Value/DCF value model.

The first step involves a few preliminary calculations. To apply the FCF formula presented in *Figure 1* we need to determine the EBIT, the gross increase in fixed assets and the increase in WCR (all figures in \$1,000):

*EBIT:*

$$\text{Income before tax} + \text{Interest expense} = 31\,396 + 2\,452 = \underline{33\,848}$$

*Gross increase in fixed assets:*

Value of fixed assets in the previous year = 66 448  
Value of fixed assets in the current year before depreciation = 71 666 + 5 811 = 77 477  
Gross increase = 77 477 – 66 448 = + 11 029

*Increase in WCR:*

WCR = Current assets – Cash – Non-financing current liabilities  
Previous year's value = 30 525 – 5 562 – 7 355 = 17 608  
Current year's value = 32 979 – 6 395 – 8 046 = 18 538  
Increase = 18 538 – 17 608 = + 930

On the basis of the above figures it is already possible to determine the current year's free cash-flow. To calculate a hypothetical tax liability, a 20% tax rate was assumed:

EBIT	33 848
– Tax on EBIT (20%)	6 770
+ Depreciation expense	5 811
– Gross increase in fixed assets	– 11 029
– Increase in WCR	– 930
<b>= Free cash-flow</b>	<b>20 930</b>

The next figure needed is the cost of capital, and for this we have to know the proportions of equity and of debt within the financing structure, together with the return requirements of the capital providers. The inner structure of the total capital used can be determined from the right-hand side of the economic balance sheet (see Figure 2):

*Shareholders' equity* = 68 732  
*Financing liabilities* = 35 545 – 8 046 = 27 499  
*Total capital* = 68 732 + 27 499 = 96 231

Based on the above data the weightings are:

*Shareholders' equity* ( $w_e$ ) = 68 732 / 96 231 = 71.42%  
*Debt* ( $w_d$ ) = 27 499 / 96 231 = 28.58%

We assume that the minimum rate of return required by shareholders ( $R^E$ ) is 8%, whilst the average interest rate on the debt (the pre-tax cost of debt,  $R^D$ ) is 5%. Still assuming a 20% tax rate ( $T$ ), the weighted average cost of capital (WACC) is:

$$WACC = w_e * K_e + w_d * K_d * (1 - T) = 0.7142 * 0.08 + 0.2858 * 0.05 * (1 - 0.2) = \underline{6.86\%}$$

Based on the FCF and WACC values calculated above, the value of the company can be estimated.

**a) Company value based on the Perpetual Annuity formula**

In this case the value is computed in a very simple way, that is, by dividing the current year's FCF by the current year's WACC:

$$FirmValue = \frac{FCF}{WACC} = \frac{20930}{0.0686} = \underline{305\ 102} \text{ (in \$1,000)}$$

**b) Company value based on the Growing Annuity formula**

With reference to the firm's strong financial position and to the positive tendencies seen in the past, let us assume that the firm will be able to increase its Free cash-flow 1% per year in an indefinite future period. In this case, the estimated firm value is:

$$FirmValue = \frac{FCF}{WACC - g} = \frac{20930}{0.0686 - 0.01} = \underline{357\ 167} \text{ (in \$1,000)}$$

The higher result is due to the growth rate which we considered, as this decreased the denominator of the ratio.

**c) Company value based on the Two-Phase method**

To apply the two-phase method we need precise forecasts for the following five years. Let us start with the following estimations (Table 4):

Table 4. Estimated FCFs for years 1-5 (Sample Ltd.)

Year	Estimated Free cash-flow (in \$1,000)
1	21 260
2	22 840
3	22 990
4	23 410
5	23 690

To discount these flows the basis is the earlier calculated WACC (6.86%). We should assume that, in order to offset the estimation risk, we applied a risk premium of 0.5 percentage points for the first phase (years 1-5) and 1 percentage point for the second phase (from year 6). Thus the discount rates for the two phases are 7.36% and 7.86%, respectively. The company value is:

$$\begin{aligned}
 FirmValue &= \sum_{t=1}^5 \frac{FCF_t}{(1+r_1)^t} + \frac{FCF_5 / r_2}{(1+r_1)^5} = \frac{21260}{(1+0.0736)} + \frac{22840}{(1+0.0736)^2} + \\
 &+ \frac{22990}{(1+0.0736)^3} + \frac{23410}{(1+0.0736)^4} + \frac{23690}{(1+0.0736)^5} + \frac{23690/0.0786}{(1+0.0736)^5} = \\
 &= \underline{303\ 742} \text{ (in \$1,000)}
 \end{aligned}$$

It is no surprise that the result here is lower than the result obtained by the Growing Annuity model, as in this case we assumed a stagnating FCF from the sixth year. However, it might be surprising that the result is lower than that estimated by means of the Perpetual Annuity formula. This is because the increase in cash-flow in the first phase was, due to the risk premiums applied, overcompensated by the increase in WACC.

**d) Company value based on the Three-Phase method**

This method requires precise forecasts for the following three years' free cash-flow. Using the same numbers as in the case of the two-phase method, the FCF estimations for the first phase (years 1-3) are the following (Table 5):

Table 5. Estimated FCFs for years 1-3 (Sample Ltd.)

Year	Estimated Free cash-flow (in \$1,000)
1	21 260
2	22 840
3	22 990

The simplest way to create the cash-flow series for the second phase (years 4-8) is by extrapolating the tendencies of the first three years. The average growth in the first phase is  $(22990-21260)/2 = 865$  per year (in \$1,000). Assuming the same average increase in the following 5 years, the FCF figures in years 4-8 will be 23 855, 24 720, 25 585, 26 450 and 27 315, respectively (in \$1,000). Then, from the ninth year we calculate with a constant cash-flow which is identical with the eighth year's FCF (27 315). To discount the flows, the originally computed WACC will be used as the base rate, increased by risk premiums of 0.5 (first phase), 1 (second phase) and 2 (third phase) percentage points. Thus the discount rates applied are  $r_1=7.36\%$ ;  $r_2=7.86\%$ ; and  $r_3=8.86\%$ . The following table summarizes the cash-flows and the discount rates to be applied in each year:

Table 6. Estimated cash-flow and discount rates for the three-phases method

Phase	Year	Estimated FCF (in \$1,000)	Discount rate	
			calculation	Value
I. ( $r_1=7.36\%$ )	1	21 260	$(1.0736)^1$	1.073600
	2	22 840	$(1.0736)^2$	1.152617
	3	22 990	$(1.0736)^3$	1.237450
II. ( $r_2=7.86\%$ )	4	23 855	$(1.0736)^3(1.0786)^1$	1.334713
	5	24 720	$(1.0736)^3(1.0786)^2$	1.439622
	6	25 585	$(1.0736)^3(1.0786)^3$	1.552776
	7	26 450	$(1.0736)^3(1.0786)^4$	1.674824
	8	27 315	$(1.0736)^3(1.0786)^5$	1.806465
III. ( $r_3=8.86\%$ )	9 –	$27315/0.0886=$ $=308 296$	$(1.0736)^3(1.0786)^5$	1.806465

Based on the above figures, the firm value is computed as:

$$\begin{aligned}
 FirmValue &= \sum_{i=1}^3 \frac{FCF_i}{(1+r_1)^i} + \sum_{j=4}^8 \frac{FCF_j}{(1+r_1)^3(1+r_2)^{j-3}} + \frac{FCF_8/r_3}{(1+r_1)^3(1+r_2)^5} = \\
 &= \frac{21260}{1.073600} + \frac{22840}{1.152617} + \frac{22990}{1.237450} + \frac{23855}{1.334713} + \frac{24720}{1.439622} + \\
 &+ \frac{25585}{1.552776} + \frac{26450}{1.674824} + \frac{27315}{1.806465} + \frac{308296}{1.806465} = \\
 &= \underline{311\,294} \text{ (in \$1,000)}
 \end{aligned}$$

It should be emphasized that this result will only be reliable if the assumptions for the cash-flow tendencies and for the discount rates are as realistic as possible.

**e) Company value based on combined net asset value / DCF value**

To mitigate the estimation risk included in the DCF methods, we should take into consideration the net asset value. This can be determined from the latest balance sheet as the difference between total assets and total liabilities:

$$Book\ value = Assets - Liabilities = 104\,645 - 35\,545 = 69\,100 \text{ (in \$1,000)}$$

If we now apply the previously-mentioned *Swiss method*, where the book value has a weighting of 1/3, whilst that of the DCF value (using the value computed by means of the three-phase method) is 2/3. The company's value is the weighted average of the two:

$$Company\ Value = 1/3 * 69\,100 + 2/3 * 311\,294 = \underline{230\,563} \text{ (in \$1,000)}$$

This result shows that, taking into consideration both the actual book value and the future cash-flow generating ability, the estimated value of the company is around \$231 million.

**4. Conclusions**

This study was intended to draw attention to some practical problems of discounted cash-flow based valuation methods. Based on a literature survey, I described the basic free cash-flow model and then discussed the problems of estimations concerning future cash-flow and the discount rates. The sample case showed how to use the formulae in practice. I would like to add that there are further means of analysis, not included in this study, which can make the valuation process even more sophisticated. For example, we could mention '*Scenario Analysis*', where the estimations are done in optimistic, realistic and pessimistic versions, to which specified probabilities are related. Another interesting option is '*Sensitivity Analysis*', where we examine the effect of possible changes in the parameters (FCF, WACC) on the results. These are planned to be the subject of later publications.

## References

- Agar, C. (2005): "*Capital Investment & Financing: A Practical Guide to Financial Evaluation*", Elsevier Butterworth-Heinemann
- Bélyácz I. (2001): "*Befektetés-elmélet*" ("Investment theory"), University of Pécs, Faculty of Business and Economics
- Bodie, Z., Kane, A., Marcus, A. J. (2004): "*Essentials of Investments*", McGraw Hill Irwin
- Copeland, T., Murrin, J., Koller, T. (2000): "*Valuation: Measuring and Managing the Value of Companies*", 3rd Edition, New York: Wiley
- Damodaran, A. (1994): "*Damodaran on Valuation*", John Wiley & Sons
- Damodaran, A. (2002): "*Investment valuation*", 2nd edition, John Wiley & Sons
- Damodaran, A. (1996): "*Investment Valuation*", John Wiley & Sons
- Dittmann, I., Maug, E., Kemper, J. (2002): "*How Fundamental are Fundamental Values? Valuation Methods and Their Impact on the Performance of German Venture Capitalists*", School of Business and Economics, Institut für Konzernmanagement, Berlin, Germany
- Fernandez, P. (2002): "Company Valuation Methods. The most common errors in valuations", *Research Paper No. 449, IESE University of Navarra*, January
- Fernandez, P. (2005): "Discounted cash-flow valuation methods: examples of perpetuities, constant growth and general case", *Working paper WP No 604*, July
- Takács A. (2003): "*A vállalatértékelés alapvető koncepciói – 2. rész*" ("*Basic concepts of company valuation – Part 2*"), *Controlling*, III/5, May
- Ulbert J. (1994): "*A vállalat értéke*" ("The value of the firm"), University of Pécs, Faculty of Business and Economics

## MACROECONOMIC INDEXES OF ROMANIA AFTER JOINING THE EU. THE CONVERGENCE PROGRAM

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**Abstract** Romania submitted this year it's first Convergence Program, which is of a special importance for him, as it is the first program which discusses both the sustainable economic development and the politics of sustainable public finances. The adoption of the euro is a matter of optimal timing, where the schedule is defined by the analysis of costs and benefits subject to the elements presented in the paper. The conclusion of the paper is that forcing the adoption of the euro in Romania could be a hazardous action, taking into account the many macroeconomic problems and structures requiring solution. In this context the consolidation of the decreased inflation, the long-term formation of the domestic capital market and the convergence of the interest rates, the relative stability of the market rate in the next few years are of outstanding importance.

**JEL Classification:** E44, E52, E61, E63, H61, H5

**Keywords:** Romania, macroeconomic indexes, EU Convergence Program, Maastricht criteria

### 1. Introduction

According to Article 99 and 104 of the Treaty of Accession of Romania to the European Union, and according to the Stability and Growth Pact of the European Council (EC Regulation No 1466/97, as amended by Regulation No 1055/2005, Regulation No 1467/97 and Regulation No 1056/2005) the EU member states which introduced the euro currency shall present annually to the European Commission the Stability Program, and the states which have not yet adopted the euro currency, present annually the Convergence Program. Romania, who accessed the EU on 1<sup>st</sup> January 2007, submitted this year it's first Convergence Program, whose methodology was ensured by the European Council through the General Directorate for Economic and Financial Affairs.

The Program elaborated for the 2006-2009 period is in line with the document concerning the introduction of the euro planned for 2007-2013; in the same time it reflects the same spirit as the accession documents. The document ensures the possibility to reconsider the steps taken for the continuation of reforms, to enhance

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convergence in a manner that would not affect the macroeconomic balance of the country and the nominal criteria.

Therefore, the first edition of the Convergence Program is of a special importance for Romania, as it is the first program which puts together the sustainable economic development and the politics of sustainable public finances. Membership to the EU created a new situation concerning monetary policies as well, since the chapter dealing with monetary and economic union of the accession treaty clearly stipulates that in case of a satisfactory performance joining the Eurozone will be compulsory for Romania.

This paper contributes to the literature in more than one way. Our approach being a practical one, we study the Romanian real and nominal convergence criteria, concentrating on the existing country particularities. We gathered the necessary information in case of Romania to confirm or to oppose the different theoretical approaches of well-known authors that studied the same subject.

Our paper brings theory and empirics together to analyze the impact of integration on convergence and to analyze the affects of the adoption of the euro on short and long term as well as to give a suggestion of the appropriate moment of the adoption. For this reason we oppose the short-term risks related to reforms to the country's medium and long-term competitiveness and economic growth.

## **2. The establishment of the economic and monetary union**

The EU has two great political plans, one is the European economic and monetary union (EMU), and beginning from the end of the cold war the extension to east of the EU. Since the creation of the European Economic Community (EEC) by the Roma Treaty in 1957 there wasn't any other project with a similar significance concerning European integration. Both were justified by history. The EMU ensures the irreversibility of the European integration and the possibility that accession to EU would not be formal, respectively it ensures the functioning of a Europe promising peace and prosperity (Dyson & Featherstone, 1999). The enlargement of the EU, the "return to Europe" means for the Central and Eastern-European countries the reunification of Europe after the collapse of communism in the area; after four decades of isolation the accession treaty meant a powerful instrument for implementing domestic economic reforms (Vachudova, 2005). As Chousa et al. (2005) show in their study, European integration is attractive for most transition economies which makes it some kind of stimulus for institutional and structural reforms. The findings of Kutan & Yigit (2007) who investigate the benefits of integration on economic growth, productivity and convergence, specifically focusing on knowledge spillovers, support their theoretical model, implying that economic integration is beneficial for member countries, especially from a long-run perspective, and Cohesion and Structural funds help the new members catch up with the core-EU members' standard of living.

The relative backwardness of the accessing countries emphasizes the importance of creating the balance between the real and nominal convergence, as its absence could lead to the standstill of the closing up process. The other important feature of the 2004 EU enlargement is the increased exposure of the new members to capital inflows. The accessing Central and Eastern European countries liberalized completely their capital markets in the pre-accession period already, as this was a condition of acquiring membership; this increases their

vulnerability to shocks caused by globalized, large-scale and changing capital inflows, and they have to reckon with this until the adoption of the euro (Neményi, 2003). In the meantime, following the transactional shock at the beginning of the 90', the Central and Eastern European countries turning into market economies could start economic growth, if they accomplished radical changes in production structure, products and markets. Thanks to this the eight Central and Eastern European countries achieved a high level of integration into the union even before accession. The greatest part of their trade is done with the EU, the products manufactured with up-to-date technology and representing enhanced added value, respectively the trade within the sector are gaining more and more weight in their export (Landesman, 2003). As Kutan & Yigit (2007) assume in their study, integration process also allows access to a wider body of knowledge and hence leads to higher productivity by enhancing the effectiveness of labor, also speeding up the convergence process.

### **3. Nominal criteria and the performance of the Romanian economy**

The simultaneous adjustment to several criteria is not a simple task even for the 12 (13 from 2007) countries members of the European Monetary Union (EMU), most of them having a developed economy. For this reason, following their accession some countries repeatedly registered indicative values, which did not comply with the current regulations. The best example could be the economy of France, where in 2005 the gross budget deficit exceeded with 6.8 percentage points the 60% limit. In short, with the exception of three member states (Finland, Ireland and Luxembourg) none of the other EMU countries was stable enough not to exceed temporarily some of the Maastricht criteria. There are countries which don't fulfil every criterion even today. This process can be illustrated by indexes of government prediction based on the Maastricht criteria and the Convergence program submitted by Romania in January 2007. The prior condition for fulfilling the nominal Maastricht criteria and the exchange rate criteria is to join to the so-called ERM II, namely to the common exchange rate mechanism.

Romania pursues the following main objectives:

1. price stability: the inflation rate should not exceed by more than 1.5 percentage points the average of the three best-performing Member States over the last one year;
2. exchange rate stability: the two years preceding the convergence report the average inflation rate should stay within the fluctuation band defined by the exchange rate mechanism,
3. budget stability: during the examination period the public deficit of the member state should not exceed 3% of the GDP, and its gross public debt should not exceed 60% of the GDP,
4. exchange rate convergence: during one year preceding the examination period the long-term interest rate of the member states may exceed with maximum 2 percentage points the average of the interest rates of the three best-performing member states.

Table 1 : The Maastricht criteria in Romania in 2006

Nominal convergence indicators	Maastricht criteria	Romania 2006
Inflation rate (percentages, annual average)	<1.5 pp higher than the 3 best-performing EU members (2.8 % <sup>*</sup> )	6.56
Long-term interest rate on government bonds issued in lei (annual percentages)	<2 pp higher than the 3 best-performing EU members (6.2% <sup>*</sup> )	7.49 <sup>1)</sup>
Exchange rate of lei comparing to euro (maximum appreciation/depreciation in percentages comparing to the two-year average) <sup>*</sup>	+ / - 15%	+10.0 / - 6.1
Deficit of the consolidated budget (percentages of the GDP)	Under 3%	-1.9 <sup>2)</sup>
Public debt (percentages of the GDP)	Under 60%	12.4 <sup>2)</sup>

1) At the emission of government bonds in August 2005

2) According to the ESA 95 method

<sup>\*</sup>) Based on the period between 2005 and 2006, as the fulfilment of the criterion is evaluated according to the stability of the exchange rate during the last two years. <sup>\*\*</sup>) The Convergence Report of the ECB (European Central Bank), December 2006.

Source: EUROSTAT, ECB, National Institute of Statistics (Institutul Național de Statistică), National Bank of Romania (Banca Națională a României – BNR)

### 3.1. The recent evolution of the macroeconomic indexes

#### 3.1.1. Inflation rate

During the last decade Romania was less efficient in what concerns the decrease of the inflation rate than other Central and East European countries. The main reasons for this are: (i) the slow and late accomplishment of the price and exchange rate liberalization process (by the issue of Currency exchange regulation No 3 in 1997, the exchange rate being completely liberalized only in September 2006 through the convertibility of the national currency); (ii) the very low initial price of the energy, associated with the increase of global prices of the oil; (iii) the deliberate adoption of a strategy which consisted in the gradual decrease of inflation, this strategy implying both costs and benefits. Due to the great discrepancies caused by the centralized industry in the economy of each former socialist country, the switch to a market economy could be accomplished only with a slow gradualism and parallel with the introduction of regulations needed for the functioning of such economy.

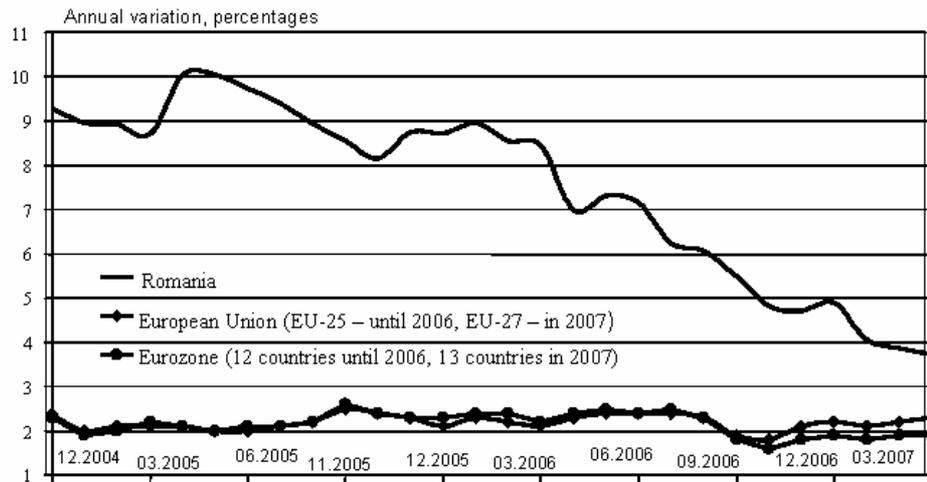
Table 2 : Inflation rate in Romania (Percentage)

	2001	2002	2003	2004	2005	2006
Annual average	34.5	22.5	15.3	11.9	9.0	6.6
December/December	30.3	17.8	14.1	9.3	8.6	4.9

Source: National Institute of Statistics

The inflation rate calculated as annual average (which is taken into account by the European Commission when evaluating the fulfilment of the Maastricht criteria) reached in 2005 for the first time after 1989 a level expressed in one number, and in 2006 it decreased comparing to the 2005 value with almost one third.

Figure 1 : Evolution of the inflation rate in the EU and in Romania (HCPI)



Source: National Institute of Statistics, Eurostat

The ECB's revised definition of price stability in 2003 as "below but close to" 2% remains a tough constraint for states whose prolonged catch up is likely to lead to difficulties in staying within this requirement (Dyson, 2006). It is known the fact that monetary policy constraint could prove more a constraint of Euro Area accession than of membership.

In August 2005 the National Bank of Romania (Banca Nationala a Romaniei – BNR) adopted the strategy of direct inflation targeting; through this the central bank clearly and directly assumed its basic task, namely to follow rigorously and consequently the stability of prices. The main indexes of this strategy are:

1. the direct target is expressed through the inflation rate of consumer prices (CPI) at the end of the year (December/December) – see Figure 2;
2. the inflation target is defined as a central point within a variation interval of  $\pm 1$  percentage point;
3. the inflation target refers to a longer period (2 years);
4. at the beginning the inflation targeting was more flexibly interpreted (taken into account the simultaneous liberalization of the capital account), and the theory of targeting inflation made it more and more rigorous, as the mechanism became easy-lowing, too,
5. a limited set of circumstances were defined *ex ante*, which are not influenced by the monetary politics of the National Bank, and which determine its responsibility in attaining the inflation target;
6. the National Bank and the Government assume jointly the inflation target.

Figure 2 : Inflation rate in Romania. December/December, variation in percentage

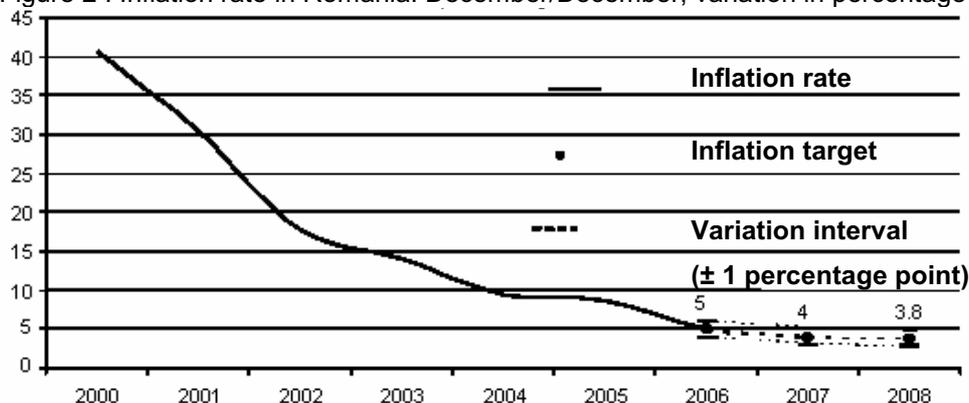


Table 3 : Inflation target between 2007 and 2009 (Percentage)

	2006- accomplished	2007 plan	2008 plan	2009 plan
Annual average	6.6	5.0	4.3	N a
December/December	4.9	4.5	4.0	N a
Inflation target	5±1 pp	4±1 pp	3.8±1 pp	3.5±1 pp

Source: National Institute of Statistics, BNR calculations

The year 2006 was the first year when the predicted target was fulfilled, at the end of the year the inflation rate being only with 0.1% less than the predicted one, and the annual inflation rate was under 6.6%. The decrease of the inflation rate was also determined by the increase of taxes on tobacco and alcohol and by the fact that the increase of fuel-based product prices was counterbalanced by the significant reduction of the price of vegetables, fruits and egg, and by the postponement for 2007-2009 of the increase of certain administered prices planned for 2006. The short-term priority in the monetary politics of the BNR is to obtain an inflation rate under 5%, taking into account that in a situation where the capital account is completely liberalized, the persistence of certain significant differentials in inflation and interest rates is an important risk factor. The risks affecting the fulfilment of the inflation target for 2007-2008:

- a more extensive increase of administered prices until the adjustment to international levels;
- the increase in prices caused by the adoption of the common agricultural policy;
- the maintenance of the surplus in demand, and simultaneously the increase of the commercial balance deficit, while the level of imports is increasing more than exports;

- the diminution or even inversion of the nominal appreciation of the national currency, namely the depreciation of the lei;
- the inertia of predictions concerning inflation.

Due to the existence of these risks the BNR will maintain the restrictive character of the monetary politics with all means it possesses: the interest rate of the monetary politics; the rate of the minimal compulsory reserves; precaution measures; administrative measures. On medium term the BNR intends to decrease the annual average rate of inflation under 4% and to join to the exchange rate mechanism ERM II by 2010-2012, respectively to decrease the annual average rate of inflation to a level compatible with the Maastricht Treaty and to adopt euro between 2012 and 2014. These are reasonable and achievable objectives. The complementary speeding up of this process seems to be counterproductive for the following reasons:

- shortening the time for the adjustment of the prices to international levels;
- the persistence and the importance of the Balassa-Samuelson effect in a country like Romania;
- the possibility of a nominal appreciation of the exchange rate (conditioned by the productivity of labour), which might shorten the alignment of the GDP per capita to European levels;
- ensuring enough time for the enhancement of some real convergence criteria (especially the GDP per capita level and the restructuring on sectors of the economy), aiming at the maximum of benefits in adopting the common currency.

Studying purchasing power parity (PPP) for the euro area is significant for other reasons besides the well-known theoretical reasons. First, if PPP holds, this means that the effects of a shock to the real exchange rates would be only temporary, suggesting that euro-area wide real exchange shocks would not have detrimental effects on trade flows within the region at least in the long run. Second, if PPP holds for the euro area, this would imply almost no real exchange rate risk due to price level convergence. The latter issue is critical not only for policymakers but also from the point of view of asset pricing and portfolio management (Kutan & al, 2004).

### **3.1.2. Long-term interest rate of government bonds issued in lei**

During the year preceding the examination the average nominal interest rate should not exceed with more than 2% the average of the long-term interest rates of three of the best-performing member states in terms of price stability. In Romania the government recently issued bonds for a period of 10 years with a rate of 7.49% for 10 years.

On medium term it is expected that the rates on government bonds will decrease following the course of the inflation, and by 2012-2014 they would be on a level compatible with the Maastricht criteria.

### 3.1.3. The evolution of the exchange rate of the national currency

Exchange-rate regimes are relevant both to the management of the macroeconomy and to the real economy (Rollo, 2006). There is no pre-EU accession acquis governing exchange rates. Pre-accession states had a variety of exchange rate regimes, varying from the tight constraint of currency boards (Bulgaria and Estonia) to managed floating (Poland) (Dyson, 2006). The ECB confined itself to clarifying that the only clear incompatibilities are with fully floating exchange rates, crawling pegs, and pegs against currencies other than the euro.

Between 2001 and 2005 the BNR switched from a system of controlled floating of the exchange rate (where the weight of the dollar/euro reference basket was gradually modified, until the reference consisted only of euro) to an (almost) free floating system, adopted together with the strategy of direct inflation targeting. In fact starting from October 2005 the BNR did not intervene in the currency market, and let the exchange rate be defined freely by market demands. This does not mean that the BNR does not reserve the right to intervene if it considers that the level of the exchange rate deviates too much from the level justified by scientific research. However it would get involved only under the conditions defined together with the European Central Bank and the EU.

Table 4 : Lei/euro exchange rate (*Annual variation in percentage*)

	2001	2002	2003	2004	2005	2006
Average change <sup>*)</sup>	-23.3	-16.7	-16.8	-7.3	11.9	10.0

\*) “-” for depreciation; “+” for appreciation, calculation done on the basis of the medium exchange rate and the difference in inflation between Romania and the Eurozone

Source: BNR

From a technical point of view the development of the lei/euro exchange rate did not fulfil the Maastricht criteria requirements between 2001 and 2004, and it did fulfil them starting from 2005 (considering that the minimal admitted appreciation is 15%, unlike depreciation, which is admitted only to the limit of 2.25%). However fulfilling this criterion was not an objective, since:

- (i) the framework of the monetary policy was radically modified, when in 2005 the BNR switched from the targeting of the monetary aggregates to the direct targeting of inflation;
- (ii) the capital account was gradually liberalized; the permission granted in April 2005 to non-residents to open bank accounts in lei at resident banks was of a specific importance; this process was completed in September 2006, when lei became completely convertible;
- (iii) the opening of the EU towards Romanian workers from 2003, which generated huge amounts of individual transfers into the current account of the balance of payments;
- (iv) the euro became the reference currency for the lei exchange rate only in March 2003; the implicit euro-dollar currency basket was given up only in January 2005.

In 2006 the lei/euro exchange rate became stable, and the nominal appreciation was ca. 10%. The Romanian authorities consider that in the following period left until the adoption of the euro lei will undergo appreciation, and the current trend of slight nominal appreciation of the exchange rate will continue,

conditioned by the continuous progress in the productivity of labour. According to the relevant criterion a country should keep its exchange rate within the fluctuation band during its participation within the ERM II of minimum 2 years. In the same time the evolution of the actual real exchange rate and the external balance is assessed as well. The significant real appreciation reflects the balanced real appreciation typical for countries converging to the EU, the speculative pressure on lei, and the impact of the monetary policy, which answers to the fiscal relaxation and to the increase in inflation demands by the aggravation of monetary conditions. The result of these impacts is somewhat diminished by the fact that in recent years the increase of real wages of domestic working power was behind the average increase of productivity. The strong increase of real wages (that exceeds productivity) typical for 2007, and respectively the increasing risks concerning budget deficit affect adversely the (good) capacity of the country to attract capital, which results in the increasing rate of external financing generating debts. Though this can be still conformed to the criteria, it causes further risks. Such influence on competitiveness can involve the risk that the country would not be able to make full use of a possible favourable evolution of external prosperity. Since the present growth is based more and more on the expansion of domestic demand financed from debts, the lack of prosperity or its restricted use could have grave consequences. In order to avoid such consequences, as the recent IMF report highlights it, the retention of the real wages increase would be desirable.

It is important to take in consideration also the reduction in interest rate spreads and in currency risk due to nominal convergence, which, for net borrowing countries, increase private investment and reduce national savings (Papadogonasa & Stournaras, 2006).

#### **3.1.4. Consolidated budget deficit**

The long-term predictability of budgetary processes and the exchange rate stability is not only a Maastricht criterion, but the guarantee for the rapid and sustainable economic growth. The increase in competition through economic integration, which is expected to increase total factor productivity improves also the home country's growth prospects. Unless the growth rate of trade partners exceeds the home country's growth rate, this channel also implies an increase in the current account deficit to GDP ratio (Papadogonasa & Stournaras, 2006). By adopting the euro the Romanian economy has the possibility to use more efficiently the advantages of stability and predictability, thus it can align sooner to the EU economy. The evidence of positive impact of integration on growth rates and productivity suggests that gained benefits over time will be more than outweigh the expected short-run consequences of the accession process (Kutan & Yigit, 2007). From this point of view the enhancement of fiscal discipline is important, irrespective of the date of the adoption of the euro, since the Stability and Growth Pact is in force in each member state, according to which states are obliged to reduce deficit. In the case when such criterion is not fulfilled, Romania can be deprived even from the granting of the Cohesion Funds. That is why it is important to create and maintain a stable budgetary condition, since stable finances establish the country's later economic performance. Comparing to other Central and Eastern European countries Romania shows a satisfactory level of budget deficit. Starting from 2002 the level of the consolidated deficit was on a level compatible with the Maastricht Criteria, and complies with the reporting

methodology of the Council's ESA 95 and of the GFS methodology used by the IMF in the course of budget calculations.

Table 5: Consolidated budget deficit in Romania (*Percentage/GDP*)

	2001	2002	2003	2004	2005	2006
According to ESA 95 method	-3.5	-2.0	-1.8	-1.3	-0.4	-1.9
According to GFS method	-3.2	-2.5	-2.3	-1.1	-0.8	-1.7

Source: Council notification (April 2006); Ministry of Public Finances, Convergence Program, January 2007

The Romanian authorities consider that a successful accession to the EU on 1<sup>st</sup> January 2007 is bound to the maximal use of the European funds already from the first year. Thus the government has a significant portfolio of projects, which can be granted European funds. Yet a certain concern of the (EU and other) authorities can be detected concerning the pro-cyclical feature of the budget policy. The Romanian authorities have the following attitude towards this concern:

- (i) The planned consolidated budget deficit of 2.5% of the GDP was not attained for 2006 due to much higher actual budget incomes than those taken into account at the moment of the budget ratification; under these circumstances the deficit is 1.9% of the GDP.
- (ii) For 2007 the level of budget deficit does not be exceed the limit stipulated by the criterion, taking into account the fact that the economic growth was continuous since 2000, and it is one of the greatest among Central and Eastern European countries. The budget should be free of tensions in order to ensure competitiveness, which should be one of the criteria of real convergence.

The Romanian government considers that the significant developments in infrastructure and environment protection represent an important index of the real convergence, and they are necessary for the successful preparation of the adoption of the common currency by the years 2012-2014.

### 3.1.5. The level of public debt

In Romania public debt is on the appropriate level comparing to the level stipulated by the Maastricht criteria. Moreover during the last five years this index was descending both according to the ESA 95 and the GFS methods, due to the joint impact of values of superior GDP increase, of low budget deficits and decreasing of some interest rates.

Table 6: Romania's public debt between 2001 and 2006

	2001	2002	2003	2004	2005
According to ESA 95 method	23.2	23.8	20.7	18.0	15.2
According to GFS method	28.8	29.0	25.9	22.1	20.2

*Percentage/GDP*

Source: Council notification (April 2006); Ministry of Public Finances, Convergence Program, January 2007

The Romanian authorities consider that during the period left until the introduction of the euro the level of public debt expressed as percentage of the GDP will increase, mainly because of the rise of the budget deficit, but it will remain far below the level stipulated by the Maastricht criteria. According to the Maastricht Treaty the countries accessing the European Union become member states to the Euro Area later. This process requires economic policies which make possible the fulfilment of the nominal convergence criteria and the continuation of the real convergence process. The central bank has a direct responsibility concerning the monetary policy undertakings contained in the Convergence Program elaborated together with the government, and concerning the date of joining the ERM II and adopting the euro; it also has a direct responsibility concerning the country's financial stability. A true image of the convergence path is important for the stability of requirements, and also for the money and capital market actors, the enterprises and population as well. The Romanian authorities have to make two important decisions: the date of joining the ERM II mechanism and the period of staying with this mechanism. The proposals of the European Commission and of the European Central Bank in this matter are the following:

- 1.) A country should join the ERM II mechanism after accession to the EU.
  - 2.) In general participation in the ERM II should not exceed the two-year mandatory period; this implies that the respective country should be well prepared when joining the ERM II.
  - 3.) The nominal convergence criteria should be fulfilled in a sustainable manner.
- The priorities of the period preceding the joining of the ERM II are: the maintenance of the low inflation rate (sustainable disinflation), long-term development of domestic capital market and the convergence of interest rates, the relative stability of the exchange rate of the national currency around the long-term balance level (in the conditions of complete convertibility) and the accomplishment of structural reforms.

This period must be ensured for the purpose of fulfilling the nominal convergence criteria and of accomplishing significant developments in real convergence.

#### **4. Real convergence**

Well-known authors debate whether switching prematurely to the euro would endanger real growth, even if it is regarded as an absolute truth that Euro Area membership confers longer-term benefits. The answer seems to be in managing the relationship between nominal and real convergence which highlights the time dimension of the question (Begg, 2006).

The direct targeting of inflation ensures the gradual fulfilment of the Maastricht criteria, and it also supports the real convergence process as well. Evidence on real convergence of towards the EU standards and productivity developments has important implications for the design of an optimal policy towards the euro zone. First, according to the Balassa-Samuelson effect, higher labor productivity leads to higher - structural - inflation that, through positive inflation differential, provokes a real appreciation of the currency. At the same time, increasing per capita income also increases domestic demand that puts some pressure on domestic prices, hence the real appreciation. An optimal monetary policy therefore requires a good understanding of the real convergence process.

Second, achieving some real convergence in the early stages of the integration process would make it easier for the candidate countries to satisfy the Maastricht criteria on nominal convergence such as low inflation and stable exchange rates. The supreme goal of integration is economic growth and thus real convergence and nominal convergence, with nominal stability, underpins real convergence (Kutan & Yigit, 2004).

#### 4.1. The evolution of the GDP per capita index in Romania

It implies the decrease of the differences between countries concerning productivity and pricing, this involving that incomes in developing countries would be raised on the level of countries having a developed industry. This is calculated through the GDP per capita expressed in PPS. The Maastricht Treaty does not specify explicitly any criterion concerning real convergence. Yet in Romania, due to the late launching and the slow completion of structural reforms (i.e. postponed privatizations and price liberalizations) the GDP per capita was 22.6% comparing to the EU-15 level. Subsequently economy developed more rapidly than in other member states, and in 2006 the GDP per capita attained 33.2% comparing to the EU-15 level. Raising the country's per capita income to the EU level serves as the most tangible proof of the success of integration. Significant progress toward per capita income convergence is seen as key in securing the political assent of the population to both transition and membership in the EU (Kutan & Yigit, 2004).

Table 7 : Indexes of real convergence (*GDP per capita*)

	EURO					PPS*				
	2000	2002	2004	2005	2006	2000	2002	2004	2005	2006
EU - 15	23,100	24,500	25,800	26,500	27,600	22,100	23,500	24,700	25,400	26,500
Romania	1,795	2,224	2,805	3,676	4,498	5,000	6,100	7,400	8,100	8,800

\*) Purches power standard

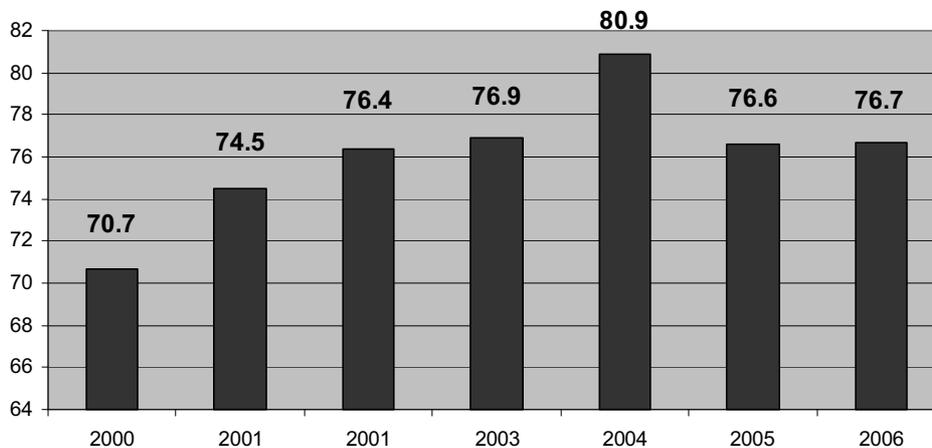
Source: EUROSTAT, National Institute of Statistics, BNR

#### 4.2. The openness of the economy

Romania shows an average level of economy openness, expressed as the weight in the GDP of the amount of exported and imported goods and services. This reveals a small and half-open economy, a situation similar to Poland's and normal for a country having a relatively numerous population.

Having examined overall foreign trade performance, evolving patterns of specialization, Romania's competitiveness in EU sunrise markets, changes in factor intensities of trade with the EU and intra-product trade, take us to the conclusion is that Romania's export offers has become diversified (Kaminski & Ng, 2004). Concerning the openness level of the economy, one can see clearly that the Romanian economy has further possibilities in the following period to open towards international economic processes.

Figure 3: The openness of the economy\* (percentages)



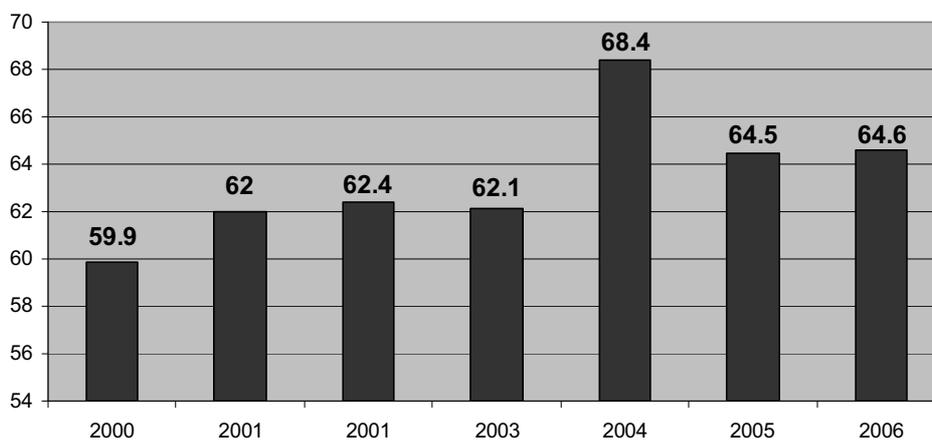
\*) (import+export)/GDP

Source: National Institute of Statistics, BNR calculations

#### 4.3. The ratio of the trade with the EU comparing to the total of foreign trade

As stipulated by the theory of economics, the more the national economies are interconnected through commercial transactions, the more their economic cycles tend to correlate, and the probability of asymmetrical shocks decreases.

Figure 4 : The ratio of the trade with the EU\* comparing to the total of foreign trade (percentages)



\*) EU-15 until 2003, EU-25 from 2004

Source: National Institute of Statistics

In the course of real convergence the qualitative fulfilment of criteria should be pursued, since a correction lacking quality could subvert the positive impacts of adopting the euro.

## **5. Conclusions**

The adoption of the euro is a matter of optimal timing, where the schedule is defined by the analysis of costs and benefits subject to the following elements:

- (i) the sustainable stability of the fulfilment of nominal convergence criteria;
- (ii) achievement of an appropriate level of real convergence and the sustainability of this level;
- (iii) decrease of participation in the ERM II exchange rate mechanism to the mandatory two-year period.

At the elaboration of the first Convergence Program of Romania, the convergence programs of the countries accessing EU in 2004, respectively other strategic documents of the authorities (i.e. National Strategic Reference Framework, National Development and Reform Program) were taken into account as well.

All these considerations show that forcing the adoption of the euro in Romania could be a hazardous action, taking into account the many macroeconomic problems and structures requiring solution. In this context the consolidation of the decreased inflation, the long-term formation of the domestic capital market and the convergence of the interest rates, finally the relative stability of the market rate around the balance level for the next period of 2007-2010 are of outstanding importance.

An additional argument to this is the example of the countries joining the EU in 2004, which adopted the inflation targeting strategy in their monetary policies. The rhythm of reforms should be maintained, and the political will should remain fully concentrated on completing the obligations assumed in the Convergence Program, since the success of integration rests upon this Convergence Program. According to our calculations, and taking into account the future challenges of structural and real convergence (reforms in the public health sector and in the retirement system, decrease of the number of public employees, the change in the structure of the national economy and its sector performance), in the condition of fulfilling the mandatory nominal convergence criteria, the period between 2012 and 2014 seems to be the best interval for adopting the euro, when benefits of accession could be maximized and costs could be kept at a minimum level. As Begg says, the trick will be to optimize the timing of successive steps along the way in negotiating fit (2006). An unfavourable ratio of costs and benefits would be a burden not only for Romania's society and authorities, but also for the community's authorities. If in the purpose of effectuating reforms the economical politics implements a carefully thought-out, genuine program that the EU organisations too have revised, it could decrease significantly the nominal fluctuations arising from uncertainties concerning reforms. In turn, if the economical politics does not assume the political risk that the launching of the reforms involves, the sole postponement of adopting the euro would not mean any advantages.

As well as today, in the future the main issue will be if the government in power has the appropriate political will, respectively if it is ready to assume the

short-term risks related to reforms and the political risks, on the behalf of the country's medium and long-term competitiveness and economic growth.

## References:

- Begg, I. (2006). "Real Convergence and EMU enlargement: The time dimension of Fit with the Euro Area", *Enlarging The Euro Area – External Empowerment and Domestic Transformation in East Central Europe*, Oxford University Press, Oxford, p. 71-89
- Chousa, J.P., Khan, H.A., Melikyan, D., Tamazian, A. (2005). "Assessing institutional efficiency, growth and integration", *Emerging Markets Review*, Volume 6, Issue 1, April 5, p. 69-84
- Dyson, K. Featherstone, K. (1999). "The Road To Maastricht, Negotiating Economic and Monetary Union", Oxford University Press, Oxford, p. 21-61
- Dyson, K. (2006). "Euro Entry as Defining and Negotiating Fit: Conditionality, Contagion, and Domestic Politics", *Enlarging The Euro Area – External Empowerment and Domestic Transformation in East Central Europe*, Oxford University Press, Oxford, p. 7-43
- Jonas, J. (2006). "Euro adoption and Maastricht criteria: Rules or discretion?", *Economic Systems*, Volume 30, Issue 4, December, p. 328-345
- Kaminski, B., Ng, F. (2004). "Romania's Integration into European Markets: Implications for Sustainability of the Current Export Boom", *World Bank Policy Research Working Paper* 3451, November
- Kaminski, B., Ng, F. (2005). "Production disintegration and integration of Central Europe into global markets", *International Review of Economics & Finance*, Volume 14, Issue 3, p. 377-390
- Kutan A.M., Bahmani-Oskooee, M., Zhou, S. (2004). "Purchasing Power Parity Before and After the Adoption of the Euro", Southern Illinois University, Edwardsville, <http://www.siu.edu/BUSINESS/econfin/papers/Microsoft%20Word%20-%20EUPPP%20r.pdf>
- Landesmann, M. (2003). "Structural features of economic integration in an Enlarged Europe: patterns of catching- up and industrial specialization", *Europea Economy-Economic Papers*
- Mockaitis, A.I. (2005). "The race to EU integration: How many and how high are the hurdles?", *Research in International Business and Finance*, Volume 19, Issue 2, June, p. 195-199
- Neményi, J. (2003). "Az euró bevezetésének feltételei Magyarországon", *Közgazdasági Szemle*, June 2003
- Papadogonas, T., Stournaras, Y., (2006). "Twin deficits and financial integration in EU member-states", *Journal of Policy Modeling*, Volume 28, Issue 5, July, p. 595-602
- Rollo, J., (2006), "EMU and the New Member States: Strategic Choices in the Context of Global Norms", *Enlarging The Euro Area – External Empowerment and Domestic Transformation in East Central Europe*, Oxford University Press, Oxford, p. 47-70
- Vachudova, M. A. (2005). "Europe Undivided, Democracy, Leverage, and Integration after Communism", Oxford University Press, Oxford
- Yigit, T.M., Kutan, A.M. (2004). "European Integration, Productivity Growth and Real Convergence", Southern Illinois University, Edwardsville, <http://www.siu.edu/BUSINESS/econfin/papers/kutan%20yigit%20feb%2004%20EER%20submission.pdf>

Yigit, T.M., Kutan, A.M. (2007). "European Integration, Productivity Growth and Real Convergence",  
*European Economic Review*, Volume 51, Issue 6, August, p. 1370-1395

Stability and Growth Pact (EC Regulation No 1466/97, as amended by Regulation No 1055/2005,  
Regulation No 1467/97 and Regulation No 1056/2005)

The Convergence Program of Romania for 2006-2009, [www.mfinante.ro](http://www.mfinante.ro)

Annual report of the BNR, 2006, [www.bnro.ro](http://www.bnro.ro)

## FINANCIAL CRISES: LESSONS FOR EUROPE

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**Abstract.** This paper examines recent financial crisis transmission mechanisms to establish the nature of crisis drivers and to draw some lessons from past experience. After reviewing the economic concepts underpinning crises, a number of historical case study crises are analysed, focusing thereafter on the current Subprime Mortgage Financial Crisis. The paper generalises fundamental causes of financial crises over the last century, such as the greater complexity of the global financial environment, increasingly rapid and widespread contagion, poor monetary governance structures, the lax lending and investment behaviour of banks, and the financial naiveté of investors and borrowers. Lessons for European economic agents include the necessity for governments to maintain open, transparent and flexible monetary relations, the imperative for proactive international central banking, the need for a review of the banking business model, and the importance of investor education.

**JEL Classification:** E58, G15, O16

**Keywords:** financial crises, subprime mortgages, contagion, central banks

### 1. Introduction

The aim of this paper is to examine the transmission mechanisms which characterise recent financial crises with a view to establishing a clearer picture of their causes as well as considering what lessons might be learned by Europe to prevent such crises in the future or at least to limit their effects. The structure of the paper will be as follows. Firstly, the terminology associated with financial crises will be defined and discussed. Secondly, the salient economic theory which helps to explain the phenomena of financial crises and financial contagion will be briefly reviewed. Thirdly, some examples of significant financial crises over the last century will be examined with a view to establishing both their causes and their outcomes. Fourthly, the current Subprime Mortgage Financial Crisis will be analysed to more clearly set out its causes and the transmission mechanism through which it might impact upon both the real and financial economies. Finally,

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the paper will summarise the general causes of financial crises and suggest what lessons might be learned by Europe to prevent such crises or at least to reduce their impact in the future.

## **2. The definition of financial crisis**

The term *crisis* (or “krisis”) has its origin in Greek in the word decision from “krinein” to decide (Concise Oxford Dictionary, 2006). More specifically, a *financial crisis* can be usefully defined as a situation when money demand quickly rises relative to money supply (Wikipedia, 2007a). Another insightful definition which emphasises the roles of liquidity and capital flight is provided by the Deardoff (2006): “a loss of confidence in a country’s currency or other financial assets causing international investors to withdraw their funds from the country.” Financial crisis might be considered a somewhat different phenomenon from *economic crisis*, the latter of which might be defined as a long-term economic state characterised by unemployment, low prices and low levels of trade and investment. Thus, economic crisis definitions emphasise the pervasive impact on the real rather than financial economy.

Aizenman (2007) provides a very useful summary discussion of financial crises. He states that financial crisis refers to:

“A rapid financial disintermediation due to financial panic. In practice this involves a flight to quality, where savers attempt to liquidate assets in financial institutions due to a sudden increase in their perceived risk, moving their savings to safer assets.”

In open economies, he argues that such investors would move their savings to foreign currency and foreign bonds, whilst in a closed economy investors will move their savings into currency, gold and government bonds. He argues that the ultimate manifestation of financial crises includes bank failures, stock market crashes, and currency crises, occasionally leading to deep recessions. Whether crises are financial or economic in nature, then, their potential impact on a country or even a region can be severe.

## **3. The economics of financial crises**

Whilst there is a large body of academic and practitioner literature on economic and financial crises, in this paper we focus on the seminal works of authors such as Hyman Minsky, Rüdiger Dornbusch and Stanley Fischer, explaining as we progress some key concepts such as borrower quality, contagion and market co-movement, asymmetric information, and solvency versus liquidity, as these concepts lay the foundations of the analysis to follow on recent financial crises.

Minsky (1964) is probably one of the most prominent works in the field of financial crises. His financial stability hypothesis was prophetic in very clearly explaining the underlying causes of the recent Subprime Mortgage Crisis and associated credit crunch. Minsky argued that long periods of economic stability encourage investors to take on more risk. As a result they tend to borrow too much and pay too much for the range of asset classes available for investment. In many respects, then, during periods of stability investors become accustomed to asset prices continually rising and their personal balance sheets improving commensurately – this imbues them with the increased confidence to borrow

further and thereby increase their risk of financial distress yet more. Minsky identifies three main types of borrower: hedged, speculative and Ponzi. 'Hedged' borrowers can meet all commitments, that is, interest and capital repayment, from their cash flows and are therefore relatively safe. 'Speculative' borrowers can meet the interest payments on their loans with relative ease, but need to rollover their loans rather than repay them as they do not have the funds for capital repayment—these borrowers are clearly more risky than the hedged borrowers. However, more risky still are what Minsky terms 'Ponzi' borrowers (named after the infamous Ponzi investment scheme in the US which collapsed in the 1920s). Ponzi borrowers, then, can repay neither the interest nor the principal on their loans, relying instead on asset prices rising continuously and periodically refinancing. The longer the period of economic stability, the greater the number of Ponzi borrowers as both borrowers and financial institution lenders become complacent. Another modern term for these Ponzi borrowers which has become popular in the financial press is the NINJA borrower, the acronym standing for "No Income No Job (*and no*) Assets". (see Kambayashi, 2007). The problem here for Ponzi borrowers is that at some point asset prices may experience corrections and/or the banking market begins to suffer increasing arrears periods and loan defaults and the whole market experiences a credit crunch, bankruptcies, bank failures, and so on.

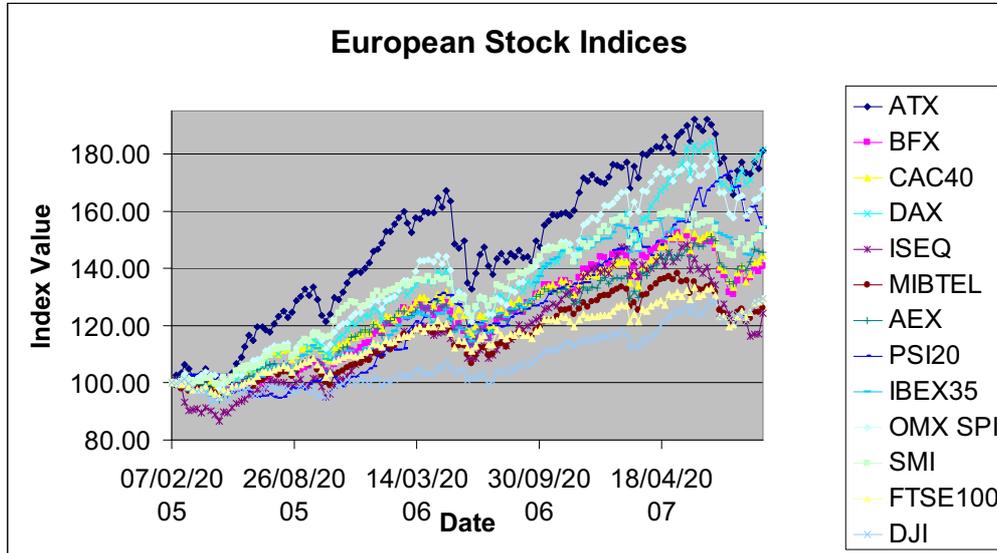
The concept of financial contagion is essential to a deeper understanding of the phenomenon of financial crisis. Contagion in its broadest economic sense is the likelihood of significant economic changes in one country spreading to other countries. The World Bank (2007) provides a more precise definition of contagion:

"Contagion is the transmission of shocks to other countries or the cross-country correlation, beyond any fundamental link among the countries and beyond common shocks. This definition is usually referred to as excess co-movement, commonly explained by herding behaviour."

In contrast to definitions of general economic contagion, definitions of financial contagion tend to focus on asset prices. *Financial contagion*, then, refers to the phenomenon when one country's economy is negatively affected because of changes in the asset prices of another country's financial market. It might be argued that the global economic system results in a series of interdependencies which make contagion inevitable during a country's financial troubles. Therefore financial contagion is concerned with excess co-movement in asset prices, precipitated and made inevitable by the globalisation of the world financial system.

To illustrate, the co-movement of asset prices, we could examine the extent to which European stock markets move together. Figure 1 plots stock market indices for key European markets over the period February 2005 to October 2007. The Dow Jones Industrial index is also presented for the purposes of comparison.

Figure 1. European Stock Market Indices February 2005 to October 2007



Source of data: Yahoo Finance, October 2007. Indices are rebased to 100 at 1<sup>st</sup> February 2005. The stock market indices relate to the following countries: ATX = Austria; BFX = Belgium; CAC40 = France; DAX = Germany; ISEQ = Ireland; MIBTEL = Italy; AEX = Netherlands; PSI20 = Portugal; IBEX35 = Spain; OMX SPI = Sweden; SMI = Switzerland; FTSE100 = UK; DJI = US.

What is readily apparent from the graph is that European stock indices are very highly correlated and tend to suffer from similar market shocks through time. An interesting point to note is how well northern European stock markets have rallied in recent months compared with the US and UK stock markets.

Figure 2 presents bivariate correlation coefficients across the European stock market indices. The average correlation coefficient approaches 0.96, thereby confirming that European stock indices move very closely together through time. Indeed, no market is correlated with another market with a correlation coefficient less than 0.85 – in this case, the Irish stock index moves least in line with the other indices, perhaps as its industry structure is less characteristic of the European average. Interestingly, all indices move very closely with the US stock market index, the Dow Jones Index.



Figure 2. Bivariate correlations between European stock market indices February 2005 to October 2007

	ATX	BFX	CAC 40	DAX	ISEQ	MIBTEL	AEX	PSI20	IBEX 35	OMX SPI	SMI	FTSE 100	DJI
ATX	1.00												
BFX	0.96	1.00											
CAC40	0.98	0.99	1.00										
DAX	0.96	0.96	0.97	1.00									
ISEQ	0.93	0.97	0.95	0.89	1.00								
MIBTEL	0.96	0.99	0.98	0.95	0.98	1.00							
AEX	0.97	0.98	0.99	0.98	0.92	0.96	1.00						
PSI20	0.89	0.92	0.91	0.96	0.85	0.90	0.93	1.00					
IBEX35	0.95	0.98	0.97	0.96	0.95	0.98	0.96	0.93	1.00				
OMX SPI	0.98	0.99	0.99	0.98	0.95	0.98	0.98	0.94	0.98	1.00			
SMI	0.97	0.98	0.98	0.94	0.95	0.97	0.98	0.88	0.96	0.97	1.00		
FTSE100	0.98	0.98	0.99	0.96	0.94	0.97	0.99	0.89	0.96	0.98	0.98	1.00	
DJI	0.88	0.92	0.92	0.97	0.85	0.90	0.94	0.95	0.94	0.94	0.88	0.90	1.00

Source of data: Yahoo Finance, October 2007. Indices are rebased to 100 at 1<sup>st</sup> February 2005. The stock market indices relate to the following countries: ATX = Austria; BFX = Belgium; CAC40 = France; DAX = Germany; ISEQ = Ireland; MIBTEL = Italy; AEX = Netherlands; PSI20 = Portugal; IBEX35 = Spain; OMX SPI = Sweden; SMI = Switzerland; FTSE100 = UK; DJI = US.

Figure 3. Bivariate correlations between European stock market index returns February 2005 to October 2007

	ATX	BFX	CAC 40	DAX	ISEQ	MIBTEL	AEX	PSI20	IBEX 35	OMX SPI	SMI	FTSE 100	DJI
ATX	1.00												
BFX	0.68	1.00											
CAC40	0.71	0.90	1.00										
DAX	0.67	0.85	0.94	1.00									
ISEQ	0.59	0.67	0.70	0.69	1.00								
MIBTEL	0.76	0.85	0.91	0.86	0.66	1.00							
AEX	0.68	0.86	0.91	0.89	0.65	0.84	1.00						
PSI20	0.03	-0.05	-0.02	-0.04	-0.07	-0.01	-0.09	1.00					
IBEX35	0.62	0.79	0.84	0.84	0.67	0.81	0.78	-0.06	1.00				
OMX SPI	0.73	0.82	0.87	0.83	0.67	0.84	0.84	0.01	0.77	1.00			
SMI	0.66	0.83	0.87	0.84	0.65	0.83	0.83	-0.02	0.77	0.83	1.00		
FTSE100	0.73	0.83	0.89	0.84	0.68	0.86	0.86	-0.07	0.81	0.84	0.83	1.00	
DJI	0.57	0.66	0.77	0.77	0.51	0.72	0.74	0.04	0.68	0.66	0.69	0.73	1.00

Source of data: Yahoo Finance, October 2007. Indices are rebased to 100 at 1<sup>st</sup> February 2005. The stock market indices relate to the following countries: ATX = Austria; BFX = Belgium; CAC40 = France; DAX = Germany; ISEQ = Ireland; MIBTEL = Italy; AEX = Netherlands; PSI20 = Portugal; IBEX35 = Spain; OMX SPI = Sweden; SMI = Switzerland; FTSE100 = UK; DJI =

A more precise approach to studying co-movement is to examine stock market index return correlations. Figure 3 reveals that European stock index returns are also very highly correlated, with an average correlation coefficient of 0.65. All of the index returns are highly correlated, except for Portuguese returns – index movement for this country is particularly uncharacteristic in the first half of 2005.

In common with many other phenomena in finance and economics, the market failure of information asymmetry is at the heart of recent financial crises. Why does information asymmetry exist in the markets for financial assets? The answer lies in human nature. As gathering information across different country financial markets is costly, investors tend to remain uninformed about asset prices and their underlying risk. As a result they instead infer price changes on the basis of how the rest of the market is reacting. Thus, the “uninformed” tend to follow the “informed” (such as well resourced large financial institutions) – this causes the whole market to move together. However, once such investors observe foreign crises occurring, they tend to reassess the risks of investing in other countries and withdraw their funds from foreign asset markets. This is often termed “herding behaviour” which gives rise to panics in financial markets. Another term employed for this behaviour is “irrational exuberance”, implying an irrational approach used to enter and exit the international market for financial assets. An interesting debate amongst economists is whether this behaviour is indeed irrational – it could be argued that such behaviour is rational after all because complete information on financial assets is too costly and the investor can therefore benefit from observing the market reaction and making decisions accordingly. However, whilst at a private level this proposition is defensible, at a public level contagion is indeed very costly and therefore a bad thing. Countries with otherwise very sound macroeconomic fundamentals can find themselves with balance of payments and banking crises through little fault of their own as a result of the contagion associated with financial crises.

The inherent focus of the banking industry on solvency rather than liquidity also lies at the centre of recent financial crises. A schematic diagram is given in Figure 4 to help explain this issue.

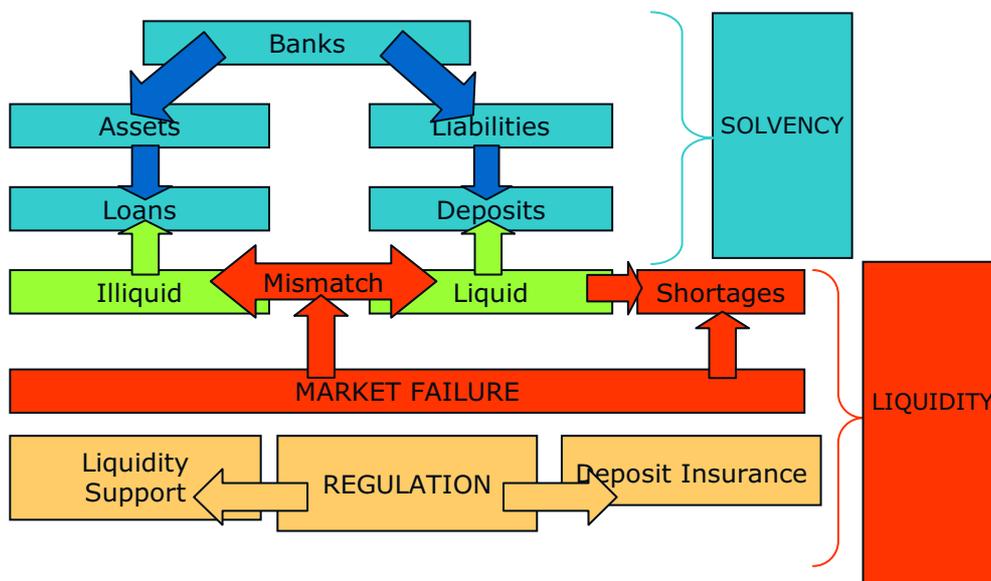
Bank regulation and therefore strategy has traditionally focused on solvency, that is, banks must demonstrate their ability to remain balance sheet solvent. Given the reverse-image of a bank’s balance sheet, this essentially means that assets must remain easily covered by liabilities and capital. To clarify, a bank must be able to cover its loans to customers (assets) from its deposits from customers (in their many forms of liability) and from capital. This has been the focus of banking regulation to date, and will remain so under Basel II regulation (Basel Committee on Banking Supervision, 2004). There is a permanent maturity mismatch between bank assets and liabilities as this is the prevailing business model of all banks – they borrow short-term and lend long-term – and as long as the flow of depositor money (or other short-term sources) is continuous and large enough to support their lending business then the model works well. However, in recent years the emerging issue is one not of bank solvency but of bank liquidity. In times of financial crises, then, the maturity mismatch becomes a significant issue as depositors withdraw on mass their funds from banks and short-term inter-bank funds tend to dry up as banks hoard funds and prohibitive interest rates emerge to

compensate for the higher perceived risk of operation. This is a liquidity problem and is an important form of market failure.

So how is this liquidity market failure addressed in the real-world? The role of the central bank is pivotal here. Central banks will intervene in the financial economy (i) to provide liquidity to banks when required to, and (ii) to provide deposit insurance to reassure depositors. When central banks intervene on both fronts then a liquidity crisis can be mitigated as banks do not run out of the liquidity required to continue in business, and depositors do not engage in 'bank runs'. Authors such as Diamond and Rajan (2002) from Chicago Business School advocate a renewed focus on liquidity in banking, adding that, due to the impact of business cycles on bank balance sheets, liquidity must be monitored by central banks and others over the cycle.

Dornbusch and Fischer (2003) provide some important insights into the subject of international financial crises, particularly their distinction between "old crises" and "new crises". They argue that old crises were characterised by a world with little capital mobility, and where a government had reserves plus some World Bank funds. However, poor government policy tended to lead to a budget deficit due to government over-spending, and an overvalued fixed currency. Such spending led to inflation, an influx of imports and a current account deficit. The deficit in turn would lead to a diminution of reserves as the currency is bolstered and ultimately a desperate need for policy change. However, policy change often came from tariffs, quotas, export subsidies, and so on, which are merely a temporary fix and just delay the onset of financial crisis. The result would ultimately be a significant currency devaluation, resulting in competitiveness gains, monetary expansion (again), and the whole transmission mechanism would repeat itself.

Figure 4 The issue of banking solvency versus liquidity



New crises, they argue, are very different phenomena. Such crises involve huge and rapid flows of short-term money around the world. Countries become

very highly geared in a globalised financial market. They are highly geared because governments are seeking to prop up weak currencies, and industry is expanding dramatically in a rush for economic modernisation. This is all fine until at some moment in time a country needs to borrow huge amounts of cash, but the world financial system decides that it will no longer lend. In globalised financial markets, the IMF and others cannot respond to such a crisis rapidly enough. As a result there is massive currency speculation, pervasive bankruptcy, and the effects quickly spread to the next country, and perhaps even the region.

Dornbusch and Fischer identify some of the drivers of new financial crises. Emerging market countries have very short-term liabilities which in itself encourages runs on financial institutions in times of crisis. These liabilities are often foreign exchange-denominated which is very dangerous in itself as such governments have no influence on the ultimate value of these liabilities. Therefore, country balance sheets have high levels of Value at Risk due to large balances of foreign exchange liabilities, as well as investments in foreign stocks. They argue that under such circumstances national credit risk can deteriorate very quickly, causing sudden short-term fund capital flight. This outflow of liquidity is particularly serious if the one remaining tool to support an ailing currency, that is, interest rates, cannot for some reason be employed successfully. Indeed many countries, particularly emerging countries, cannot raise interest rates given the weakness of their banking industry. Banks are often weak as indigenous companies are highly geared and on the verge of financial distress at any time. Interest rates cannot be raised to stop funds being withdrawn from the country, and the country may also have small reserves and a lack of transparency regarding the size of those reserves in an attempt to prevent currency speculation. There is no warning of impending crises due to this lack of transparency – the timing of such crises thus becomes very difficult to predict. Further, the depth of the crisis is also difficult to establish, as it depends on bank gearing, the ability of foreign investors to liquidate collateral associated with debt investments, and the political environment, particularly the tendency of troubled governments to print more and more cash in a vain attempt to address the problem.

#### **4. Financial crises over the last century**

Economists look at past case studies of economic phenomena in order to determine in some objective manner what occurred, why it occurred and what was the impact on a country's economy. There are a multitude of financial crises which we could focus on in this paper, but for the purposes of efficiency here we focus on the Wall Street Crash of 1929, the US Savings and Loan Scandal of 1985, the Crash of 1987, the East Asian Financial Crisis of 1997, the Long-Term Capital Management Debacle of 1998, and the Dot.com Crash of 2000. An excellent review of recent financial crises is provided by Steve Schifferes and this paper draws upon some of the insights of this review (see BBC, 2007c). For certain of these crises we will focus on the context of the crisis, whilst for others we will focus on the transmission mechanisms involved, particularly where there are lessons to be learned for the current Subprime Financial Crisis.

The Wall Street Crash of 1929 was essentially caused by investor speculation in the emerging industries of the day such as radio and automobiles. However, in common with all speculative bubbles, assets became over-priced and the bubble ultimately burst, leading to a 13% correction in share prices on 24<sup>th</sup>

October 1929, a day which became known as “Black Thursday”. The crash deepened and on 29<sup>th</sup> October that year shares fell by a further 11%. By 1932, the US had experienced a 90% reduction in stock market capitalisation, and shares did not recover their former values for another 25 years! The impact on the US economy of the financial crisis was pervasive: consumption and investment expenditure collapsed, there was widespread unemployment and the banking system virtually shut down. The curious government response to the crisis was to raise rather than lower interest rates, to raise tariffs, cut government spending, and generally tighten the macroeconomic environment, a situation not reversed until World War II necessitated huge government spending. However, the most important outcome of the crisis was its impact on the regulatory environment of financial markets in the US: the Securities and Exchange Commission was established to regulate the stock market and to ensure greater transparency; the Federal Deposit Insurance Corporation was launched to protect bank depositors; and the Glass-Steagall Act of 1933 was passed to separate commercial and retail banking. The corporate and personal disasters of the crisis therefore ultimately resulted in a regulatory framework which helped to ensure a very stable growth environment in both US real and financial markets – therefore lessons of the time were learned the hard way. Indeed, the US model which emerged in this era is considered by many to be the regulatory ideal to which other countries aspire.

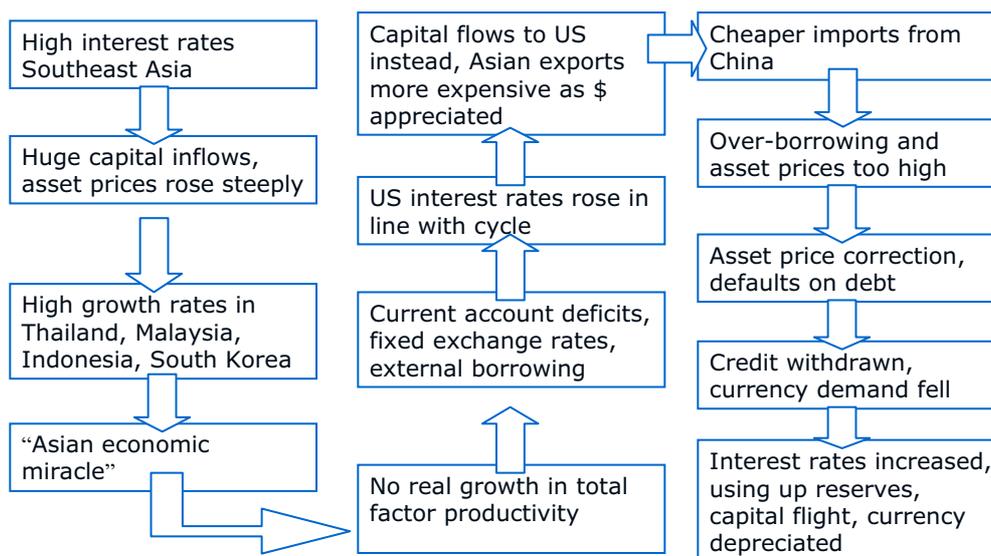
The US Savings and Loan Scandal of 1985 arose with the liberalisation of the banking market in the US. Local banks, known as savings and loans institutions, were able to both attract deposits and issue home loans. However, with financial deregulation came new freedoms to engage in more complex and more financial risky transactions. Banking imprudence therefore led to a loss of faith in such banks as many approached bankruptcy and the system experienced bank runs. Learning from earlier crises and wishing to avoid a repeat of Black Thursday, the US government stepped in to insure bank deposits, introduced \$150 billion of liquidity into the banking system, though allowed smaller banks to disappear in the process through acquisitions.

The Crash of 1987 was precipitated by the introduction of rapid computerised trading, a spate of highly-g geared takeovers, a belief that insider-trading was endemic, the US economy experiencing a slow-down with a depreciating dollar, and at the same time German interest rates were rising. The result was that the Dow Jones experienced its largest one day fall in history, falling by 22% on 19<sup>th</sup> October 1987. The US government tackled the crisis head-on by dropping interest rates, encouraging other central banks to follow suit, and introducing stock trading circuit breakers and suspensions in trading. The effects were therefore contained and there was little effect on the real economy in the US. However, as a prime example of the ‘ripple effects’ of financial crises, in the US, the lower interest rates ultimately gave rise to a housing market bubble in the UK which ultimately burst, and, more significantly, the UK’s exit from the Exchange Rate Mechanism as sterling could no longer be supported through open market operations at the same time. Thus, international contagion was brought into sharp focus.

The East Asian Financial Crisis of 1997 is probably the best documented crisis this century in the financial press and the most analysed crisis in the academic literature, deservedly so given the extent of its effects and the breadth of its associated contagion. A particularly useful summary of the crisis can be found in

the article, “1997 Asian Financial Crisis” (Wikipedia, 2007b), an article on which the discussion below is based. Another interesting discussion of the crisis is provided by Paul Krugman on his MIT website (Krugman, 2007). The transmission mechanism in Figure 5 helps us to explain how the crisis evolved.

Figure 5 The transmission mechanism of the East Asian Financial Crisis of 1997



Let's commence with the prevailing high interest rates at that time in Southeast Asia, giving rise to huge capital inflows and a large rise in asset prices. The whole region appeared to be growing very strongly, particularly Thailand, Malaysia, Indonesia and South Korea, with many commentators referring to the phenomenon as the “Asian Economic Miracle”. However, there was no real growth in total factor productivity (the increase in output not explained by increases in labour, capital or technology). In each country, a similar pattern emerged of current account deficits, whilst governments maintained a fixed exchange rate system (their currencies were pegged to the dollar) and borrowed huge sums on external markets to finance the high rate of growth. When interest rates rose in the US, consistent with the economy's point in the business cycle, this led to capital flows to the US instead of Asia. The US dollar appreciated as a result, and therefore, implicitly, the value of the pegged Asian currencies did so as well, leading to Asian exports appearing suddenly more expensive. At the same time, China with its new-found market-based socialism was emerging as an economic power to contend with and East Asian countries former export customers began to switch to imports from China, particularly as value of the Chinese currency was purposefully kept artificially low. Thus, the East Asian countries borrowed further to maintain their growth paths and fill the funding gaps which appeared when export incomes declined. The mix of excessive gearing and inflated asset market prices eventually led to some sharp market corrections and Asian companies began to default on their debt obligations. Credit was withdrawn from both countries and their indigenous companies, leading to a sharp fall in currency demand. To maintain

liquidity, East Asian countries were prepared to pay increasingly unsustainable interest rates, using up their reserves very rapidly. There was significant capital flight from the region and currencies collapsed in value. The ultimate impact was widespread recession across the region, leading in turn to political crises, government changes, and the rise of religious fundamentalism. Worldwide financial institutions such as the IMF and the World Bank were considered by many as partly to blame and the crisis led to the emergence of anti-globalisation movements across the world. Since the crisis, East Asia has engaged in foreign exchange reserve building and economic restructuring. The sharp fall in demand and economic stagnation also led to collapsing Russian oil prices, with the attendant political and economic problems this caused in that region. Further afield in the US and UK, the flight of capital into these "less risky" markets gave rise to a sustained period of low interest rates, extremely high liquidity and funding complacency – ultimately this resulted in asset market bubbles such as the Dot.com crisis and the lax lending environment underpinning the current Subprime Financial Crisis.

The Long-Term Capital Management Debacle of 1998 was set in motion by, of all people, two Nobel prize winners in Economics. Myron Scholes and Robert Merton set up a hedge fund specifically to trade government bonds on the basis that their rates should converge, trading on the small rate differences between bonds on a highly geared footing. However, partly because the Russian government defaulted on its bonds in August 1998, investors moved their capital into perceived safer US bonds, thereby raising interest rate differences rather than reducing them. As a result, the fund had to sell its bonds at diminished values (to maintain yields), a credit crisis was precipitated, and interest rates increased dramatically. The Federal Reserve, in conjunction with a range of US banks, stepped in to save LTCM for fear of wider contagion, the Fed dramatically cut interest rates to stimulate liquidity, and the fund was ultimately liquidated two years later. Even Nobel prize winners cannot spot crises in advance.

Leading up to the turn of the century, the world experienced a technology stock market bubble and subsequent crash known as the Dot.Com Crash, particularly in the US and the UK. This bubble was based upon an apparently unquenchable desire of investors for internet shares. The value placed by investors on many of these companies was based entirely on distant projected earnings, whereas most made no current profit at all, with some not even making any current sales. However, in March 2000, the bubble burst with NASDAQ eventually falling 78% in value by October 2002. The wider repercussions of this collapse in share prices were that investment in the real and financial economy fell sharply, leading to a slowdown in the US economy, with the Federal Reserve making a sharp cut in interest rates to stimulate the economy back into action. Many economists subsequently argued that this crisis, and its associated low interest rate environment, sowed the seeds for the subsequent Subprime Financial Crisis some years later.

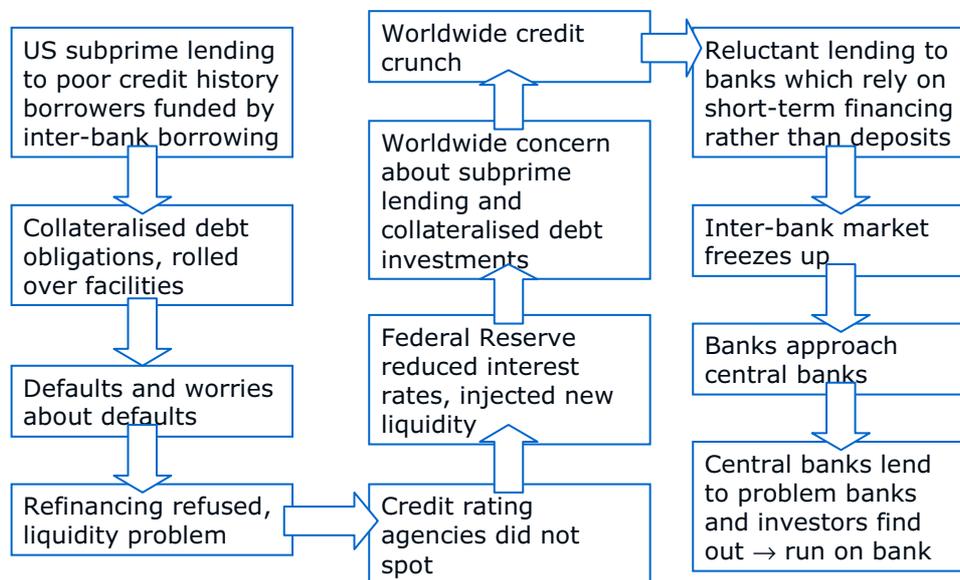
## **5. The current Subprime Mortgage Financial Crisis**

The route cause of the current Subprime Mortgage Financial Crisis, as its title implies, was the US subprime market. Subprime lending is the term used to describe lending to poor credit history borrowers to purchase homes, much of which is funded by inter-bank borrowing. The interesting feature of such lending is that much of the debt has then been bundled up and sold on i.e. multiple subprime

mortgage assets were bundled up and sold on as mortgage bonds, often mixed with other debt assets of varying risk – these instruments are known as collateralised debt obligations or CDOs. With much of the risk effectively passed on to others in the financial system such as large investment banks, hedge funds and so on, the original lenders are able to lend to new clients and again pass on the risk. The CDO market effectively provides such banks with a rolling credit facility and a fairly safe business operation in interest rate spreads. However, this business model was implicitly flawed as many of the borrowers were of the Ponzi type, relying on increasing real estate values to be able to refinance and ‘stay afloat’. Ultimately such borrowers began to run up mortgage arrears and to default – they simply could not afford to repay or even service their mortgage loans, and with real estate values slowing or contracting they were unable to refinance. When the scale of this lax lending became apparent, the lenders themselves found that they could no longer sell on their CDOs and a liquidity crisis ensued. Interestingly, the credit agencies which pride themselves on gauging financial institution risk failed to adequately measure this deterioration in the debt ratings of the financial institutions involved. The US Federal Reserve decided to step in once it realised the extent of the problem, reducing interest rates over successive months and injecting liquidity into the market to support the banks. However, the damage was to some extent already done and world financial markets were shaken by fears over lax-lending and the extent of investment in CDOs. The fears ultimately led to a worldwide credit crunch – effectively a chronic lack of liquidity in the international banking system, or more specifically, the international inter-bank system.

The nexus of bank dealings experienced a sudden change in character, with banks reluctant to lend to each other. Particular casualties here became those banks which relied on short-term financing in the inter-bank market to source their funds for lending on – the inter-bank market effectively froze to the extent that even the oldest, most established and safest financial institutions would not consider lending to each other. Certain banks began to realise that unless liquidity was provided by their home central bank in its capacity as “lender of last resort” then they would go out of business rather quickly. International contagion effects, exacerbated by the ‘black box’ nature of banks, in that nobody knew who was heavily invested in US or other CDOs, led to the vulnerability of certain banks. Most notably, in the UK, the bank Northern Rock, ran into trouble as it relied on the inter-bank market for the liabilities side of its balance sheet as its depositor base was relatively small. Depositors in the bank became aware of the potential risk to their savings as a result of the financial press coverage and a “run on the bank” ensued. The transmission mechanism is illustrated in Figure 6.

Figure 6 The transmission mechanism of the US Subprime Financial Crisis of 2007



The impact of the current Subprime Mortgage Financial Crisis is a classic example of the financial contagion discussed earlier. The immediate impact of the crisis in the UK was focused on the possibility of failure of Northern Rock. The Bank of England intervened in its capacity as lender of last resort, providing liquidity to the bank at a penalty rate. However, to stem the flow of money from the bank (the run on the bank), the Bank needed to offer some reassurance to depositors. The current deposit insurance agreement offered only partial cover of deposits (100% of the first £2,000, 90% of the next £33,000, and no coverage for amounts exceeding £35,000). The Bank was thus forced to improve the deposit insurance to cover 100% of deposits for Northern Rock depositors – the result was that depositors in the bank felt reassured and the run on the bank ended, much to the relief of the whole financial system. The impact for Northern Rock was, however, a collapse in its share price and fundamental questions regarding its continuance in business, particularly given the punishing interest rates to which it is now subject.

However, the wider impact of the subprime crisis is more pervasive. In the UK, for example, it has led to the beginnings of a correction in the real estate market. Furthermore, the UK has seen an end to lax lending and unsustainably low spreads on mortgage lending generally. The Bank of England itself has been subject to severe criticism, as has its tripartite relationship with the regulator of the wider financial system, the Financial Services Authority, and the UK Treasury. This tripartite system will have to review its operations. The impact on the UK banking system is that mortgage lending will be stricter in the immediate future and Ponzi borrowers will no longer be welcomed customers. Most banks will see reduced profits and some are beginning to declare large losses from subprime related investments. The overall impact is a serious loss in confidence in the UK financial system and a predicted slowdown in the UK economy, and perhaps even other European economies, who have enjoyed stability for too long.

The transmission mechanism of the current subprime crisis can be readily tracked with reference to key macroeconomic and financial market variables. An insightful analysis is provided here by the Capital Economics UK Quarterly Review (2007), the market bulletin produced by the City-based research company for the benefit of the investment banking sector. Capital Economics examine Datastream and Bloomberg data to examine the causes and effects of the crisis. They demonstrate that mortgage arrears in the subprime market were at a low of 10% of borrowers in 2005, though were clearly on the rebound, increasing towards 14% over 2006 and 2007. Clearly an increase in arrears tends to signal an increase in defaults to follow. Subprime borrowers were attracted to the market by very low historical interest rates – indeed real official US interest rates were actually negative over the period 2003 to 2006. They argue that the cause of these low rates was the emergence of the “super-saver” in South East Asia, China, the Middle-East, Russia, and Japan, whereby such countries were running current account deficits and building large foreign exchange reserves. Low interest rates gave rise to excess demand for debt investments, leading to diminishing yields. Long global government bond rates became very low, providing a nominal return of as little as 4%. Investors as a result began the search for riskier investments yielding higher returns, giving rise to spreads of emerging market bond yields over US Treasury yields of as little as 2% by 2006/7. There would have appeared to emerge a belief that the world was less risky – in many respects, investors lost touch with risk, or at least accepted a new risk-return trade-off. However, when the extent of lax lending in the US subprime market was realised, fear regarding where subprime losses might fall led to equity prices falling, though fairly quickly recovering. In the UK, they show that the spread of UK outstanding variable mortgage rates over the base rate approached a recent historical low of 0.5% by 2007. The rebound of the equity market demonstrated, they argue, that bonds rather than equities suffered worst as a result of the crisis. The spread of corporate bond yields over government bond yields increased in a matter of months from 55 basis points towards 100 basis points by October 2007. In the inter-bank market, even more dramatic fallout from the crisis was evident as the spread of global 3 month interest rates over 3 month treasury bill yields rose from less than 50 basis points to as much as 250 basis points by September 2007, most markedly observed for US data. Banks were suddenly becoming far more cautious in their global money market dealings and investors evidently now wanted a far greater reward for investing in corporate debt.

Capital Economics consider how serious the crisis is, compared with the secondary banking crisis of 1973/4 and the more recent Long Term Capital Management debacle of 1998. They examine the spread of UK 3 month interest rates over 3 month treasury bills and find that whilst the current subprime crisis is demonstrably worse than the Long Term Capital Management crisis in terms of spread response, it is far less serious than the secondary banking crisis.

The response of key figures in international money is quite insightful regarding both the causes of, and remedies for, the current financial crisis. Jean-Claude Trichet of the European Central Bank argues that:

“Transparency vis-à-vis investors and savers, transparency vis-à-vis surveillance authorities, appears to be the best vaccine against contagion.”

He clearly sees the root cause of the problem lying in information asymmetry. Investors need to be better educated and informed of the risk of their asset investments, and central banks should more carefully monitor the risk of the financial institution investment portfolios within a particular country.

The Bank of England, heavily criticised for its handling of the current crisis in the UK, and in particular its belated tackling of the Northern Rock issue, emphasise the need for very and well-timed careful intervention. Mervyn King, the Governor of the Bank of England, reflects that, "there was no point in blowing up the train before it hit the buffers" (BBC, 2007a). Here, he is essentially reinforcing the argument that it is irresponsible to intervene too early when a bank is in trouble as doing so would have undermined confidence in the banking system. There is clearly a difficult balance to strike between the need to secure the integrity of the banking system, and avoiding moral hazard, where banks believe that they can behave irresponsibly because they will always be bailed out by the central bank.

The outgoing Rodrigo Rato, in the IMF's Global Stability Report discusses the consequences of the current crisis:

"The potential consequences of this episode should not be underestimated, and the adjustment process is likely to be protracted. Credit conditions may not normalise soon, and some of the practices that have been developed in the structured credit markets will have to change" (IMF, 2007).

Here, Rato argues that, given the uncertainty regarding which financial institutions have invested in CDOs and the risk of other recent credit market investments are after a period of lax lending, the consequences may emerge gradually over a period of time. Indeed, recent news regarding Citigroup's losses in credit market investment and speculation regarding other large investment bank losses confirm that banking woes will play out for some time to come (BBC, 2007b). The impacts on the financial and real economies across the western world and farther afield are yet to be determined, though increased market volatility and some slowing in economic growth would appear inevitable.

## **6. Summary and conclusions**

We are now in a position to summarise the causes of financial crises over the last century and to suggest some lessons for European financial markets and economies. The causes may be summarised with respect to the following key economic agents: the environment, governance, financial institutions and investors.

What characteristics of the financial and economic environment tend to give rise to ideal conditions for a financial crisis? Financial markets are today and have been for some time truly global entities, and financial institutions follow markets as they roll around the globe on a 24 hour a day, 7 day a week basis. Not only has this dynamic been facilitated by computerised trading systems and easy access to computer-based information systems, but also by liberalisation in many of the world's financial markets which has led to an opening up to both investors and corporations. However, the wider range of asset classes now available to investors and their intermediaries has brought both an ability to diversify truly internationally, but also the problem of determining the true level of risk of an asset which may derive its value from economic activity in a remote country – the market failure of information asymmetry has not necessarily diminished but has changed in nature. Truly worldwide financial markets rather than regional inter-country

investment bring worldwide contagion rather than regional contagion. This problem is exacerbated by an increasing reliance on short-term money markets rather than longer term sourcing for investment funds. The inexorable emergence of asset market bubbles is nearly always a feature of financial crises, and in worldwide investment markets the private costs of adequate investment information to investors are still likely to predominate the public costs of asset market collapses to the public. The benefit of hindsight does not prevent the emergence of asset market bubbles.

Governance structures in financial markets have of course had an important role to play in recent financial crises. Governments are often the worse culprits here. Poor or politically-orientated macroeconomic policy can be to blame, particularly in crises earlier in the century. Irresponsible, externally funded growth leading up to general elections to keep incumbent governments in power was historically the norm in Latin American countries – corrections involved currency and asset market collapses as well as serious longer term consequences for growth. An ability of governments to adjust interest rates is another general historical characteristic of both the Latin American and East Asian world. A situation where politicians own the banks and companies are very highly geared does not allow for increases in interest rates as both companies and banks would meet with financial distress. If interest rates cannot rise to support a currency in times of potential crisis then it is simply a matter of time before the currency collapses, particularly given the role of unscrupulous hedge funds and currency speculators (Dougherty, 2007).

Central banks also have a role to play – such banks are not noted and geared up for rapid responses to impending financial crises. They tend to be reactive rather than proactive in this respect. Early intervention is considered 'heavy handed' whilst late intervention is considered inadequate. Additionally, the tools of intervention are often developed in the light of *past* financial crises and one lesson concerning financial crises is that each has its novel features, and regulatory prescriptions are therefore necessarily backward rather than forward-looking. Central banks do not always work together when national interests are considered better served by taking unilateral action or espousing certain unhelpful or destabilising views publicly. Outside the European Central Bank, consensus may not be the norm. As discussed earlier in this paper, central banks need to promote balance sheet adequacy rules for banking which encapsulate not only solvency but also liquidity safeguards – as in any other business cash and near-cash tend to dominate bank balance sheets rather than longer term structural issues. Central banks and other regulatory bodies need to review policies with a view to restoring investor trust, and this intangible yet essential element appears to have been forgotten in the rush towards international financial market expansion and deepening.

Financial institutions themselves have been very much at the centre of recent financial crises and have to accept some of the blame. Banks have been allowed by lax regulation to develop business models which are simply unsustainable in the event of financial volatility. Too much reliance on money markets to fund longer term lending has exacerbated the intrinsic bank business model of maturity transformation. The problem in the UK is that lending and deposit-taking have become too detached. Institutional investors have lost sight of the risk-return relationship, particularly the need for careful diversification when

investing the money of others. Over-investment in a single country, industry or asset can give rise to the bubbles which lead to asset price collapses. Poor lending is at the route of both recent and historical financial crises. Lending to Ponzi or NINJA borrowers should simply be prohibited by regulation, as reliance on asset price increases rather than borrower income to service loans is a recipe for disaster. Such borrowers were often drawn into the market by clever 'teaser offers' at the end of which borrowers could not hope to even service let alone repay loans. In the US, automated underwriting of mortgage loans also led to more lax and less considered lending. The issue of the bundling of debt assets by banks to be sold on to other financial institutions is clearly a driver of the recent crisis – investors cannot easily unravel the true risk of the bundled asset – hence the current worry amongst bank shareholders regarding just how risky their bank's investment portfolio is. Hedge funds are sometimes fingered as partly to blame as they have been observed short-selling bank stocks at the same time as 'fanning the flames of worry' concerning unwise CDO investment and potential liquidity problems. All banks were probably guilty of liquidity hoarding when the credit crunch began to squeeze, regardless of the risk rating of counterparties, which surely requires a more balanced and realistic approach than that observed in recent months. The underlying issue here is that banks remain 'black boxes' to each other, to their shareholders and to their depositors – this situation contributes to the feeling of uncertainty and the ultimate "flight to quality" when market conditions get tough.

Finally, investors are far from blameless in both the current and in past financial crises. Investors claim to be more sophisticated than ever, though still blindly engage in herding behaviour and 'irrational' exuberance, readily blaming others when things go wrong. They borrow to fund asset bubbles and still tend to focus their investment in one or two markets which currently look the most promising (a good example being the UK focus on the real estate market). Investors treat each asset bubble in the same way – "we know its an asset bubble and cannot be sustained in the long-term, but I will get out of the market before it corrects" – though we know that not everyone in a market can get out without 'getting their fingers burnt'. Bank depositors are not provided with adequate information on their bank's investment risk profile, but would they know what to do with it if they had such information? Probably not. Thus, investors are to blame as they are naïve and need re-educating regarding the relationship between risk and return.

So what lessons can be drawn from the review of recent financial crises and their causes? Here we identify those parties who need to learn: governments, central banks, stock markets and investors.

Governments by now have learned that flexible exchange rates are always the best policy if you wish to reduce the chance of financial crisis. However, flexible exchange rates must be operated in conjunction with the ability to either increase or decrease interest rates. The ability to increase interest rates to prevent huge capital outflows is an important tool in a global financial environment. Conversely, the ability to reduce interest rates to 'kick-start' an economy after a major financial crisis can be the key to early recovery. Governments reacting to successive financial crises should learn the lesson that early intervention is always the best policy – failure to tackle the causes of financial crises as they emerge is a recipe for failure whereas strong and visible intervention can prevent escalation. Asset bubbles are very visible and should be monitored very carefully by governments.

After all, governments by definition have a macro view on the country and its component markets. If such bubbles are likely to be destructive when they burst then the full range of policy options should be reviewed and action taken proactively. Resorting to protectionism to tackle a financial crisis never works in the longer run – in a global environment the global capital flows which can be an important characteristic of the cause of financial crises are also part of the potential solution for rebuilding an economy hit by crisis. In order to build and maintain credibility and trust in the financial system and in its assets markets, particularly stock markets, governments must help to ensure that accounting standards are strictly adhered to and that insider trading laws are robust. Finally, governments have an important role in ensuring that all economic agents, whether regulators, financial institutions, or even investors, are adequately educated on the risk-return trade-off of financial and real market investments. There exists a clear mandate for greater resourcing of finance education at all levels in a country.

Related to the governance role of governments, there needs to be a clear demarcation of macroeconomic management, financial market regulation and central banking functions in a country. Given rapid financial innovation and the novelty of certain components of financial crisis transmission mechanisms, this tripartite relationship should be subject to constant review and revision. Otherwise the 'system' for dealing with crises will always be reactive and a little too late to avoid the very negative consequences of crises. Central banks must take a wider view and work together more whilst recognising the diversity of economic environments across countries and empathising with at times divergent national interests. The European Central Bank might be considered a good model of the way forward here. Where central banks intervene, they should be able to do so not only proactively but also in relative secrecy so that 'fixes' to the financial system are given the opportunity to work rather than those fixes actually triggering the next phase in a financial crisis as the public begin to panic. Central banks need to focus not only on solvency but also on liquidity, examining all aspects of bank balance sheet risk. Whilst secrecy would appear to be an important feature of crisis prevention to avoid investor panic, the general rule in financial markets must be transparency, and in particular risk transparency. Financial institutions need to be reminded by central banks of their obligation to adequately assess the underlying risk of their investments on behalf of not only their shareholders but also on behalf of depositors. Poor risk management in a bank's business model does not mean merely lower yields on bank stocks but also potential capital loss for bank depositors. Central banks must always and everywhere be a lender of last resort to the banking system but only if the worst aspects of moral hazard can be avoided. The dual support mechanism of bank liquidity support and deposit insurance must be funded by the banking sector itself and not by the public purse. The correct 'pricing' of liquidity support and deposit insurance to the banks should avoid excessive moral hazard.

Debt rating agencies need to be reformed so that they no longer have such a cosy business relationship with their corporate subjects. Perhaps there is a role for public rather than private bond rating agencies given the failures of the latter to adequately measure credit instrument intrinsic risk. Central banks need to prevent once and for all the practice of banks lending to poor quality borrowers – the impact of this lax lending is always destructive as it compounds asset bubbles and builds in the certainty of ultimate correction. No longer should Ponzi or NINJA

borrowers be entertained by bank managers. The related problem of CDOs needs some close attention – ‘mix-and-match’ debt instruments should be no longer be issued by banks unless they are accompanied with detailed risk assessment information. There should be an end to ‘paperwork-free’ bonds in the modern financial system. Risk always has a price in financial markets and unbundling risk classes should increase transparency and confidence in the ability of financial markets to correctly price risk. The time has probably come to take a closer look at the operation of hedge funds – a current and lively debate is already happening across Europe on just this issue. Hedge funds should not be able to continue to break the conventional wisdoms of portfolio management as in bear markets the risk of so doing may simply be unacceptable. Finally, investors need to get back in touch with the realities of risk, learning again to correctly price risk and not revert to the sort of investment complacency which emerges as a dangerous bi-product of a long period of economic stability. Remember that stability can be very destabilising!

## References

- Aizenman, J. (2007). “Financial Crisis”, *Princeton Encyclopedia of the World Economy*, February, Princeton University Press.
- Basel Committee on Banking Supervision (2004). *International Convergence of Capital Measurement and Capital Standards, A Revised Framework*, June, Bank for International Settlements.
- BBC (2007a). “Bank defends role in crisis”, <http://news.bbc.co.uk/go/pr/fr/-/1/hi/business/7004001.stm>.
- BBC (2007b). “Citigroup chief executive resigns”, <http://news.bbc.co.uk/1/hi/business/7078251.stm>.
- BBC (2007c). “Financial Crises: Lesson from History”, Steve Schifferes, BBC News, <http://news.bbc.co.uk/go/pr/fr/-/1/hi/business/6958091.stm>.
- Concise Oxford Dictionary (2006). “Definition of crisis”, Oxford University Press, 11<sup>th</sup> revised edition.
- Deardoff, A.V. (2006). *Terms of Trade: Glossary of International Economics*, World Scientific Publishing Company.
- Diamond, D.W. and Rajan, R.G. (2002). “Liquidity Shortage and Banking Crises”, *NBER Working Paper*, No. 8937, May.
- Dornbusch, R. and Fischer, S. (2003). “International Financial Crises”, CESifo Working Paper, No. 926, Category 6: Monetary Policy and International Finance, March.
- Doughterty, C. (2007). “Economic powers to study growing influence of hedge funds”, *International Herald Tribune*, February 10, <http://www.iht.com/articles/2007/02/10/europe/web.0210G7.php>.
- International Monetary Fund (2007). *Global Financial Stability Report*, International Capital Markets Department on Market Developments and Issues, September 2007.
- Kambayashi, S. (2007). “Problems in America’s housing market begin to undermine confidence in the global credit market”, *Economist*, July 12<sup>th</sup>.
- Krugman, P. (2007). “The Myth of Asia’s Miracle”, <http://web.mit.edu/krugman/www/myth.html>.
- Minsky, H. (1964). “Longer waves in financial relations: financial factors in the more severe depressions”, *American Economic Review*, Vol. 54, No. 2, pp. 324-355.

Trichet, J.C. (2007). "Challenges to the International Monetary System: Rebalancing Currencies, Institutions and Rules", Keynote address, Session 445, *Salzburg Global Seminar*, 29<sup>th</sup> September 2007.

Wikipedia (2007a). "Definition of financial crisis", [http://en.wikipedia.org/wiki/Financial\\_crisis](http://en.wikipedia.org/wiki/Financial_crisis).

Wikipedia (2007b). "1997 Asian Financial Crisis", [http://en.wikipedia.org/wiki/East\\_Asian\\_Financial\\_Crisis](http://en.wikipedia.org/wiki/East_Asian_Financial_Crisis).

World Bank (2007). "Definitions of Contagion", *Macroeconomics and Growth*, <http://econ.worldbank.org/WBSITE/EXTDEC/EXTRESEARCH/EXTPROGRAMS/EXTMACROECO/0,contentMDK:20889756~pagePK:64168182~piPK:64168060~theSitePK:477872,00>

Yahoo.com (2007), <http://uk.finance.yahoo.com/m2>.

Zuckoff, M. (2005). *Ponzi's Scheme: The True Story of a Financial Legend*, Random House, New York.



## AN EVALUATION MODEL FOR AGRICULTURAL EXPLOITATIONS

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**Abstract.** The measurement of agricultural exploitation sustainability can be achieved through a set of indicators which refer to the three fields – economic, social and ecological. For each field we can detail special indicators, with different shares in the construction of the general aggregated indicator for measuring the sustainability of the agricultural exploitation.

**JEL Classification:** Q12

**Keywords:** sustainable development, economic, ecological, social, agricultural exploitations

### 1. Introduction

A sustainable agriculture must be economically viable, ecologically “healthy” and fair from the social point of view (Vilain, 2003). The sustainable agricultural exploitations must answer to these three objectives as well as possible considering their territorial context and their own agrarian system.

The main problem encountered is the way of measuring the sustainability of agriculture and of the agricultural exploitations. The variables which could represent synthetically the three sustainability objectives mentioned before are very difficult to define. We can see in the specialized literature a lot of lacks in defining the instruments for evaluating and monitoring in dynamics the different components of sustainability (Belcher, Boehm and Fulton, 2004; von Wiren-Lehr, 2001). These can be added the various definitions of sustainability when the production systems are considered at local, regional and national scale.

In order to solve these problems recent research have focused on developing some indicators for estimating the different components of agricultural sustainability. The studies through these indicators cannot be generalized but they enable the knowledge and evaluation of the phenomenon and also facilitate useful expertise for agricultures and society.

This article intends to present the main premises for the elaboration of a management model for a sustainable agricultural exploitation from Romania. The

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model takes into account the well-known methods for the elaboration of indicators concerning the sustainability of agricultural exploitations. We are referring to IDEA method (Indicators of Agricultural Exploitation Sustainability) elaborated in 2000 and revised in 2003, the IDERICA method (the adaptation of the previous method to the specificity of statistical evidence from France).

## **2. Literature Review**

Sustainability, as a theoretical concept, raises a series of problems because of multiple approaches – the holistic approach of own agricultural and ecological system, the approach from the perspective of management sciences, from the thermodynamics science perspective and from the geographical perspective – which determines the difficulty of defining the sustainability indicators and their implementation into practice. (Jean-Joseph Cadilhon, Patricia Bossard, Philippe Viaux, Philippe Girardin, Christian Mouchet et Lionel Vilain, 2006).

The meaning of sustainability differs across space and time and between individuals. Hueting and Reijnders (1998, p. 139) argue that “sustainability is an objective concept to the extent that natural science is objective”, an argument which draws on the point that “we can only assess sustainability after the fact; it is a prediction problem more than a definition problem” (Costanza and Patten, 1995, p. 193). The practice of predicting environmental impacts (and hence the sustainability of particular activities) invariably engages with conditions of complexity and uncertainty (Stirling, 1999), which inevitably reinforce the subjective element of assessing sustainability. The current momentum for the development of sustainability indicators arose from the 1992 Rio Earth Summit where the Commission on Sustainable Development (CSD) was established to monitor the progress of sustainable development using standards or indicators of sustainable development. This has received additional impetus in preparations for the ‘Rio + 10’ conference in 2002. As a consequence, there is now a rapidly developing literature on the use of sustainability indicators alongside indicator development programmes being undertaken by national governments as well as organisations such as the United Nations, OECD and the World Bank (see Moldan and Billharz, 1997). Agriculture has been included in this development with work on, for example, the Framework for the Evaluation of Sustainable Land Management (Smyth and Dumanski, 1993) and Land Quality Indicators (Pieri et al., 1995).

Rigby, Woodhouse, Young and Burton (2001) argue that the design and use of indicators of sustainable land management, land quality indicators and indicators of sustainable agriculture can be extremely useful in that they force those involved in the discussion of sustainability to identify the key aspects of sustainable agriculture and to assign weights to them.

This literature provides a variety of definitions of what an indicator is and different understandings of the primary roles of indicators. Gallopin (1997, p.14) surveys a wide range of literature and reports that in different sources an environmental indicator has been identified as “a variable...a parameter...a measure...a statistical measure...a proxy...a value...a meter or measuring instrument...a fraction...an index...something... a piece of information...a single quantity... an empirical model... a sign”. Glenn and Pannell (1998) argue that “an indicator is a quantitative measure against which some aspects of policy performance or management strategy can be assessed”. This role of quantification assigned by many authors is not universally accepted, however, since some

authors regard qualitative indicators (e.g. visual assessment of soil erosion) as valid tools. There is typically a trade-off between the extent to which the indicator captures the necessary information regarding the underlying variable(s) and the ease of monitoring.

The concept of sustainability apparently has great appeal with regard to environmental and resource management, yet its applicability in practical decision making is hampered by the ambiguity of its meaning, and the multiplicity of definitions that have been proposed (Pannell and Schilizzi, 1999). The idea of sustainability indicators seems to have grown out of a recognition that sustainability cannot be condensed to a single simple definition. Its multifaceted nature can be dealt with by monitoring a range of indicators of different types. Hence, in recent years terms such as 'sustainability indicators' and 'environmental indicators' have increasingly been used (e.g. Lefroy and Hobbs, 1992; Standing Committee on Agriculture and Resource Management, 1993; Mannipieri, 1994; Oades and Walters, 1994; Pankhurst et al., 1995; Kellogg, and Goss, 1997; Ministry for the Environment, 1997).

The idea of promoting the monitoring of sustainability indicators has been embraced by many people concerned with promoting adoption of more sustainable land-management practices. Pannell and Schilizzi (1999) argued that sustainability indicators are a practical and reasonable vehicle for attempting to deal with the multifaceted nature of the ambiguous term 'sustainability'.

Most of the proposed indicators are strongly technical in focus, with no close link to management decisions. It has been recognised that the types of indicators most useful for different groups of users are likely to differ, but the nature of the differences has not been explored. This appears to reflect a lack of emphasis on actual decision making in the literature so far. There have been attempts to persuade farmers to monitor and use sustainability indicators, but it is clear that the attempts have failed. Given the lack of a management focus of most indicators proposed so far, this is not surprising. It may also be related to the ad hoc nature of the criteria for selection of indicators that have been proposed so far. The criteria do not appear to have been based on a consistent, underlying conceptual framework.

Pannell and Glenn (2000) argue that the value of a sustainability indicator springs from its potential to improve decision making, and so it is best thought of as a source of information. They present a conceptual framework, based on decision theory and standard information theory, to help guide thinking about the values of potential indicators.

From the perspective of agricultural policy, there are two broad decisions to make: which indicators to recommend and promote to farmers, and which indicators to collect to assist in policy making. These sets of indicators are likely to differ. Given the differences in decision problems faced by these two sets of decision makers, Pannell and Glenn (2000) believe that the sets of indicators are likely to differ substantially, potentially with little or no overlap between them. They suggest criteria that are most important for four different choices relevant to design of a program of promoting use of sustainability indicators to farmers. Criteria are needed for the choices between regions, between farms: sites, between resource management problems and between alternative indicators for any given management problem. In each case, they indicate whether the criterion is desirable, highly desirable or essential for a given choice to be made.

But in choosing indicators to recommend to farmers, it has to be recognised that whatever is recommended to them, farmers will make their own, independent choices based solely on their own perceptions about whether indicators are worth monitoring.

Though farm management indicators always aim to be simple statements of a complex reality, the assessment of a wide range of indicators can actually be quite complicated. Farm typologies offer a tool for synthesising the assessment of the farm management indicators. With a farm typology we refer to a stratification of farms that is homogeneous according to specific criteria relevant to policy such as environmental performance and farm management practices. There are several arguments for creating such a typology, all stemming from the fact that the farm is the key level at which decisions are made in relation to the management of farmland and natural resources in cultural landscapes. A typology offers a tool to assess the farm management indicators as an integrated set rather than as single indicators, thus highlighting linkages between the different indicators. Furthermore, this also allows for a better understanding of the underlying drivers behind the farm management indicators - Andersena, Elbersenb, Godeschalkc, Verhoogc (2007). The identification of the indicators concerning the sustainability of the environment and the social one poses the biggest problems because at economic level the identification and quantification of sustainability indicators is facilitated by the agricultural accounting evidences. Also, recent studies concerning the evaluation of agricultural sustainability show the difficulty of using simultaneously indicators from at least two fields (Girardin, Bockstaller and van der Werf, 2000; Pacini and others, 2003).

Using several measurement scales for the sustainability of a system poses problems concerning the share of different scales and the concessions made when choosing an indicator.

As it results from recent specialized literature referring to the indicators of agricultural exploitations sustainability, we remark the problem of the difficulty in creating is where sustainability manifests itself, everything in order to obtain a simple evaluation instrument and for the results to be easily spared among the interested ones. IDEA and IDERICA methods answer to these limits through the system of elaborated indicators.

The agricultural exploitation represents the economic basis for the village survival, for rural in general, because of reduced dimensions the investment capacity is low, keeps up with progress with great difficulty and thus the incomes obtained are reduced.

The more reduced share of agriculture, especially regarding employment and as an income source for the rural population, makes the policy of the agricultural production more and more insufficient, taken as singular, as a strategy for improving the situation of the rural areas. This is why finding alternatives for using the resources of the agricultural exploitations may be an actions way.

In Romania the policy for agricultural exploitations structures must aim, on one hand, at creating employment possibilities in non-agricultural spheres, and on the other hand it should be oriented in the direction of sustaining and increasing the viability of the exploitations.

Intensive agriculture has solved only partially the problem of food security and ensured the welfare of agricultural producers only correlated with quite expensive agrarian policy measures. The particularities of the production process

in agriculture as well as the long time needed for recovering the components of the natural capital generate long time intervals between cause and effect.

Because of these shortcomings alternative agricultural systems were developed, whose success depends on the global managerial approach of the rural space. In this context sustainable development is defined according to local, regional and national particularities which will influence the order of priorities in adopting the reconstruction and conservation objectives. The human dimension becomes more and more important, being constituted on one hand from producers who have to take into account both a new criterion, the ecological one, and the new professional orientations, and under these circumstances to ensure economic efficiency and on the other hand from consumers, who prefer the quality of ecological products and the services offered by agricultural exploitations, but few are willing or have the means to cover the supplementary costs generated by the requirements for the protection of the environment.

The future the emphasis in agriculture and in the rural space will be on the identified priorities such as: the improvement of manufacturing and marketing structures for agricultural and fish products, the food quality control, as well as the veterinary and fito-sanitary control, the improvement of infrastructure for rural development and agriculture; the development of rural economy and human resources; the protection and conservation of the natural environment.

### **3. Methodology**

After analyzing bibliographical sources (The National Strategic Plan, 2006; The Complex Development of Rural Space, 2006; The General Agricultural Census, 2002; Ghereș, 2002; Ghereș and others, 2002; Samochiș and Vereș, 2004) and the results of our previous research (Vereș, 2003; Mortan, 2005; Lazăr and Mortan, 2003; Mortan and Lazăr, 2000) we can assert that for setting up a sustainable agricultural exploitation we must take into account at least the following:

- the land and the climate;
- the size of the farm;
- the report cultivated land-grassland;
- the space for stables and buildings;
- the liquid or solid garbage, the space occupied by holes in m<sup>3</sup>;
- the rotation of crops and their alternation;
- the soil works;
- controlling the weeds and pests;
- the available workforce;
- the organization of work;
- the sale of products and services;
- the financing of individual agricultural exploitations.

The measurement of an agricultural exploitation sustainability can be achieved through a set of indicators which refer to the three fields – economic, social and ecological. For each field we can detail special indicators, with different shares in the construction of the general aggregated indicator for measuring the sustainability of the agricultural exploitation. Synthetically they can be presented in the following way:

Table 1. Indicators for measuring the sustainability of the agricultural exploitation

Field	Subfield	Indicators
The sustainable development of the production environment (ecological)	The diversity of activities	The diversity of annual crops The diversity of perennial crops The diversity of other associated vegetal crops The diversity of the animal livestock The evaluation and improvement of the genetic patrimony The development of non-agricultural activities
	The territory organization	The type of rotation The size of field in rotation The conservation of the natural environment The administration of the fodder surfaces
	The production technology	The quantity of chemical fertilizers The level of pesticides and veterinary products The soil protection The administration of water resources The energetic autonomy degree
The sustainable development of the social environment	The quality of the products and rural space	The quality of the produced foods The treatment of agricultural wastes The valorization of buildings and landscapes The quality of roads
	The development of rural services	Complex services Direct valorization The association of producers
	Human development	Training Employment rate Life quality Work hygiene and security
Sustainable economic development	Economic viability	The income level
	Economic independence	Financial autonomy The influence of direct helps
	Efficiency	Profit rate

Source: Adapted after Girardin and others, 2004; Schneider, 2004; Vilain, 2003.

The shares of the specific indicators have relevance only in a concrete situation, because of the zonal diversity from Romania, in general and from the NW region in particular. Because of this we established shares only for the three fields to which refers the indicator for measuring the sustainability of the agricultural exploitation in the following way:

- For the sustainable development of the production environment (ecological) 33,3%. This share is justified by the role played by the ecological part in

sustainable development. Seeing the real importance of this field can diminish the negative effects generated by economic and social development;

- For the sustainable development of the social environment 33,3%;
- For the economic sustainable development 33,3%.

The system of indicators that we propose is an open one, and we can identify other specific indicators and even new subfields according to concrete situations. According to the indicators identified as necessary for the evaluation of the sustainability of an agricultural exploitation we consider that this should fulfill the following premises:

- to use complex and performant managerial techniques meant to ensure the ecological integrity towards the natural environment and even to the consumers;
- to be specific for the area according to the soil and the climate and to ensure a certain relation between the products demand and supply, that is to be flexible;
- the dimension of the agricultural exploitations should correspond to its specialization and the technologies applied in order to be efficient;
- to preserve biodiversity, the beauty of the landscape and other goods which are not evaluated on the existing markets;
- to be profitable for producers on long-term;
- to be economically efficient, from a social perspective, that is: to ensure food safety and at the same time corresponding incomes for agricultural producers.

To characterize the durability of agricultural exploitations from the N-W region, we investigated the entire set of indicators proposed through methodology in Cluj county, taking into consideration the fact that its characteristics represent the mean of the N-W region characteristics. In order to determine the conventional level of the indicators, we started from the real situation registered within the Agricultural Direction of Regional Development from Cluj and also from the information resulted from our field studies.

The evaluation of every indicator and the score obtained from every domain and subdomain was done through a detailed analysis of the information resulted from our study specific for the N-W Development Region. The application of this model in the area mentioned above allowed us to identify different scores, as presented in the Table 2.

Table 2. Indicators for measuring the sustainability of the agricultural exploitation and their values

Indicators	Points	Subfield	Field
The diversity of annual crops	5	The diversity of activities (23 points)	The sustainable development of the production environment (ecological) (69 points)
The diversity of perennial crops	6		
The diversity of other associated vegetal crops	3		
The diversity of the animal livestock	3		
The evaluation and improvement of the genetic patrimony	1		

The development of non-agricultural activities	5		
The type of rotation	10	The territory organization (28 points)	
The size of field in rotation	2		
The conservation of the natural environment	8		
The administration of the fodder surfaces	8		
The quantity of chemical fertilizers	2		
The level of pesticides and veterinary products	8	The production technology (18 points)	
The soil protection	5		
The administration of water resources	2		
The energetic autonomy degree	1		
The quality of the produced foods	4		
The treatment of agricultural wastes	1	The quality of the products and rural space (13 points)	The sustainable development of the social environment (40 points)
The valorization of buildings and landscapes	4		
The quality of roads	4		
Complex services	3		
Direct valorization	8	The development of rural services (13 points)	
The association of producers	2		
Training	2	Human development (14 points)	
Employment rate	3		
Life quality	7		
Work hygiene and security	2		
The income level	3	Economic viability (3 points)	Sustainable economic development (17 points)
Financial autonomy	10	Economic independence (12 points)	
The influence of direct helps	2		
Profit rate	2	Efficiency (2 points)	

The equal weight attributed to the three domains will result in 42 points which highlights the durability of agricultural exploitations from the N-W Region. The score will situate under the mean value that could be obtained.

#### 4. Conclusions

In conclusion, the N-W Region is characterized by a level of development that will not allow us to have a favorable opinion regarding the fact that in this region does not exist agricultural exploitations within which a durable agriculture is taking place, not a management in line with the European Union requirements.

In our opinion, the chance for the future development of agricultural exploitations, with the condition that there will be no surplus of agricultural production in the EU, is represented by the development of a durable agricultural exploitation with a strong ecological character, based on biotechnology.

Based on our model of evaluation for durable agricultural exploitations, we believe that we can discuss about durable agricultural exploitations only if the value of the aggregate durability indicator will be at least 70 points.

As a result a series of measures taken by the government and local authorities are necessary to improve the current situation.

#### References

- Andersena E., Elbersenb B., Godeschalkc F., Verhoogc D., (2007) Farm management indicators and farm typologies as a basis for assessments in a changing policy environment, *Journal of Environmental Management*, 82, 353–362.
- Belcher K.W., Boehm M.M., Fulton M.E. (2004) Agroecosystem sustainability: a system simulation model approach, *Agricultural Systems*, 79 (2), 225-241
- Cadilhon J., Bossard P., Viaux P., Girardin P., Mouchet C., Vilain L. (2006) Caractérisation et suivi de la durabilité des exploitations agricoles françaises : les indicateurs de la méthode IDERICA, *Notes et études économiques*, 26, 129-158
- C.C.E. (2004) *On support for rural development by the European Agricultural Fund for Rural Development (EAFRD)*., Bruxelles
- C.C.E. (2005) *Orientations stratégiques pour le développement rural (2007-2013)*, Bruxelles
- Commission Européenne (2001) *Cadre pour des indicateurs relatifs aux dimensions économique et sociale d'une agriculture et d'un développement rural durables*, Bruxelles
- Costanza R., Patten B. (1995) Defining and predicting sustainability, *Ecological Economics*, 15 (2), 193–196
- European Commission (2000) *Report of Conference on Rural Development. EU-US Conference on the Role of Agriculture in Rural Development*, Washington DC, November 14
- European Commission (2003) *The European Conference on Rural Development 12-14 November*, Salzburg
- Gallop G. (1996) Indicators and their use: information for decision making. In: Moldan, B., Billharz, S. (Eds.), *Sustainability Indicators. Report on the Project on Indicators of Sustainable Development*. Wiley, Chichester
- Ghereș M. (2002) Considerente de ordin economic privind rolul și locul asolamentului în agricultura viitorului, în *Lucrările Conferinței Internaționale – Autovehiculul, Mediul și Mașina Agricolă*, *Acta Technica Napocensis, Universitatea Tehnică, Cluj – Napoca*, 45, 319-324

- Ghereș M., Roș V., Fehete L. (2002) Conservarea solului – cerință vitală a unei dezvoltări durabile, în *Lucrările Conferinței Internaționale – Autovehiculul, Mediul și Mașina Agricolă, Acta Technica Napocensis, Universitatea Tehnică, Cluj – Napoca*, 45, 313-318
- Girardin P., Bockstaller C., van der Werf H. (2000) Assessment of potential impacts of agricultural practices on the environment: the AGRO\*ECO method, *Environmental Impact Assessment Review*, 20, (2), 227-239
- Girardin P., Mouchet C., Schneider F., Viaux P., Vilain L., Bossard P. (2004) *IDERICA Etude prospective sur la caracterisation et le suivi de la durabilite des exploitations agricoles francaises*, Ministere de l'Agriculture, de l'Alimentation, de la Peche et de la Ruralite, Paris
- Hueting R., Reijnders L. (1998) Sustainability is an objective concept, *Ecological Economics*, 27, 139–147
- Institutul Național de Statistică al României (2004) *Recensământul General Agricol 2002*, INS, vol.1-12.
- Kellogg R.L., Goss D.W. (1997) Development of environmental indicators for use in macroeconomic models, *Journal of Agricultural Applied Economics*, 29, 77–86
- Lazăr I., Mortan M. (2003) *Economic Structure of Rural Space by Illustrate in Beius Depression, Rural Space and Regional Development*, Ed. Studia, Cluj-Napoca, 260-263
- Lefroy T., Hobbs R. (1992) Ecological indicators for sustainable agriculture, *Australian Journal of Soil & Water Conservation*, 5, 22–27
- Moldan B., Billharz S. (Eds.) (1997), *Sustainability Indicators. Report on the project on Indicators of Sustainable Development*. Wiley, Chichester
- Mortan M. (2005) *Agroturismul – o alternativă posibilă*, Ed. Dacia, Cluj-Napoca
- Oades J.M., Walters L.J. (1994) *Indicators for sustainable agriculture: policies to paddock*. In: Pankhurst C., Doube B., Gupta V., Grace P.(Eds.), *Soil Biota: Management in Sustainable Farming Systems*. CSIRO Publishing, Melbourne, 219–223
- Pacini C., Wossink A., Giesen G., Vazzana C., Huirne R. (2003) Evaluation of sustainability of organic, integrated and conventional farming system: a farm and field-scale analysis, *Agriculture, Ecosystems & Environment*, 95 (1), 273-288
- Pannel D., Schilizzi S. (1999) Sustainable agriculture: a question of ecology, equity, economic efficiency or expedience?, *Journal of Sustainable Agriculture*, 13, 57–66
- Pannel D., Glenn N. (2000) A framework for the economic evaluation and selection of sustainability indicators in agriculture, *Ecological Economics*, 33, 135-149
- Rigby D., Woodhouse P., Young T., Burton M. (2001) *Constructing a farm level indicator of sustainable agricultural practice*, *Ecological Economics*, 39, 2001, 463–478
- Samochiș V., Vereș V. (2004) Exploatația agricolă-între teoria economica și practica legislativă, în *volumul Probleme actuale de statistică*, Editura Junimea, Iași, 319-327
- Smyth A.J., Dumanski J. (1993) FESLM: An international framework for evaluating sustainable land management, *World Soil Resources Report 73*, Food and Agriculture Organisation of the United Nations, Rome, Italy
- Stirling A. (1999) The Appraisal of Sustainability: some problems and possible responses, *Local Environment*, 4 (2), 111–135
- XXX, *Planul Național Strategic 2007-2013*, Februarie 2006, România

- Vereş V. (2003) Modalități de abordare a pieței produselor agricole, *Studia Universitatis Babeş-Bolyai, Oeconomica*, 48(1), 129-135
- von Wirén-Lehr S. (2001) Sustainability in agriculture – an Evaluation of principal goal-oriented concepts to close the gap between theory and practice, *Agriculture, Ecosystems & Environment*, 84 (2), 115-129
- Vilain L. (2003), *La methode IDEA. Indicateurs de durabilite des exploitations agricoles. Guide d'utilisation.*, Educagri editions, Dijon

## ORGANISATIONAL CULTURE AND CONATIVE BEHAVIOUR PATTERNS IN TRANSITION ECONOMIES

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**ABSTRACT.** The process of changing organisational culture has proven to be one of the major management challenges and only rarely takes place differently than through gradual evolution. In practice, all aspects often seem to be in favour of changes, but they do not occur. The case of Slovenian SME company is presented, and Slovenian and Romanian transition process from planned economy to market economy is compared. The concept of conation is used to study employees' behaviour patterns with Kolbe Index™. The study suggests that natural talents of employees do not support organisational culture change in analysed company. Their self expected behaviour pattern suggests that employees feel that they must implement changes and new processes, organisation and planning; however, their natural inclination is to simply wait for superiors' instructions. Hence, they are stuck in indecision and inactivity as no one is willing to take stand on any issue in either direction.

**JEL Classification:** J 24, M 14

**Keywords:** organisational culture, conative behaviour patterns, transition economies, SME, Romania, Slovenia.

### 1. Introduction

Post-transition economies of Central Europe, among them Romania and Slovenia, have faced many challenges of external environment in their recent history; moreover, they have dealt not only with such challenges as globalisation and increased competition as all market economies do, but also with

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unprecedented culture change, which has influenced all parts of their social and economic life. Nowadays, a need for entrepreneurial organisational culture emerges all-over Central Europe.

Organisational culture is commonly understood as a multidimensional dynamic concept. According to Robbins (1996) is organisational culture the “social glue” that helps hold the organisation together by providing appropriate standards for what employees should say and do. The development level of organisational culture in business environments can be judged by the level of relationship development and by observing the forms of their individual and group behaviour (Kovač et al., 2006). “Organisational or corporate culture is the pattern of values, norms, beliefs, attitudes, and assumptions that may not have been articulated but shape the ways in which people behave and things get done” (Armstrong, 2003). It could be claimed that company’s organisational culture is a winning factor in competitive markets on one hand and anchor of outlived “old way” which have to give place to “new way” of doing things on the other hand. Kotter and Hasket (1992) claim that organisations that have been successful in the past may persist in their cultural values even though these values inhibit an organisation from adapting to a changing business environment. In practice, changing organisational culture has proven to be one of the major management challenges and only rarely takes place differently than in gradual evolutionary way.

There are not many studies of the topic, but those that were conducted (Troy, 1994; Car et al., 1996; Smith, 2002; Mourier & Smith, 2001) have come to the same conclusions. The organisation’s culture develops over time and becomes a powerful force for shaping the behaviour of those in the organisation and for newcomers to the organisation (Fleet & Griffin, 2006). It seems that development of organisation reflects the development of an individual which leads us to the concept of learning organisation. We agree with Robinson et al. (1997) that all organisations are in fact learning organisations. In literature, learning is usually connected with cognition. Individuals build cognitive maps of their work contexts (Dixon, 1994). Individual learning is transferred to organisational level only when these maps are made explicit and shared (Kim, 1993). On the other hand, behavioural development can be seen as new responses or actions based on existing interpretations (Jashapara, 2003). Some authors refer to behavioural learning as “single-loop” learning (Argyris & Schon, 1978). The higher cognitive level is referred to as “double-loop” learning which occurs when the assumptions and principles that constitute the governing variables are examined and challenged (Jashapara, 2003).

Social information processing approach to organisations (Salancik & Pfeffer, 1978) is enhanced by social reality construction processes. An individual’s behaviour in a social environment is guided by the displays of behaviour from others within the environment on information about values, norms, expectations, and behaviour outcomes obtained by observing others (Glomb & Liao, 2003). Consequently, an individual reacts according to the structure, values, norms, and procedures of an organisation.

## **2. Organisational culture in transition economies of Romania and Slovenia**

There are several influential factors which effect organisational culture history, such as values and vision of its leaders, shared experiences, beliefs, stories, and rituals of its employees, the reward and incentive system, and

organisational norms about performance and behaviour (Trice, 1988; Trice & Beyer, 1993). All these facets have strong influence on organisational culture in transition economies. The study of measuring entrepreneurial potential in transition economies (Romania, Slovenia, Poland, Croatia, the Czech Republic, Russia) conducted by Muller and Goic (2002) found substantial differences in entrepreneurial potential. Romania and Slovenia had somehow similar violent process transition (overthrow in Romania and civil war in the former Yugoslavia) but different economic systems as a base. Slovenia practiced self management system with many elements of market economy, while Romania on the other hand had centrally planned economy. Level of economic development, cultural differences, religion (Roman Catholicism in Slovenia and Eastern Orthodox Church in Romania) have been influential factors for differences in organisational culture changes due to transition and late introduction of entrepreneurship.

Values are important corner stones of building new organisation culture. According to Grigoruta and Corodeanu (2005) are values of the organisational culture in Romanian companies the following: respect for order and discipline, interest in assuming responsibility for actions or decisions, quality of products and services, concern for clients' satisfaction and good results by observing procedures, etc.

Pučko (2000) in his survey, carried out in Slovenian medium and large enterprises in a diversity of industries, claims that managing directors' personal values have changed slowly and insignificantly in the transition period. The most important values are the following: providing good working conditions for employees, saving jobs, enabling self-fulfilment and improving employees' life style. They are regarded as the most important values for managers. Profit-sharing is much more appreciated as a value by Slovenian than by Western European top managers. Pučko (2000) further argues that much needed endeavours might result in more responsible and ethical behaviour of managers, but one should not expect spectacular changes.

Substantial number of studies is concerned with transition process (Kovač & Jesenko, 2004; Nuti, 2003; Blejer, 2001; Lang & Pawlowsky, 2001; Hancock, 2000; Derleth, 2000; Schönfeld, 2000). They suggest that direct transfer of models and methods of developed economies to transition economies is neither possible nor recommendable. It is rather evolutionary process which poses many questions for 'transitional countries' while moving from centrally planned economic structures to market economies (EBRD, 1999; Wade, 2003).

Discussions on organisational culture can not avoid the issue of different management styles. Privatisation and consolidation of ownership have often forced managers to take key initiatives in directing companies' development (Kovač & Jesenko, 2004). They are often referred to as change agents or accelerators of transformation processes (Lang & Müller, 2000). Managers who gained knowledge and experience only in centrally planned systems have had according to Luthans and Riolli (1997) great difficulties with making individual decisions, having participative style, encouraging creativity or taking initiatives. Central European countries transforming into market economies have encountered varied reasons for either success or failure involving "historical, cultural, political and even geographical issues" (Luthans & Riolli, 1997) which is consistent with findings of similar studies (Frese et al., 1996; Iankova, 1998; Puffer, 1993; Schneider & Barsoux, 1997). Companies in transition economies are becoming

increasingly aware of importance of corporate social responsibility (CSR). Vuță (2007) finds that the firms' total investments in corporate social responsibility activities in Romania in 2006 were over 10 million Euros, mainly for donations, programs of social assistance, contributions, support provided to relief agencies, corporate events, financing some scientific or research projects, educational programs, support provided to disfavoured persons, programs for protecting the environment, etc.

Despite different backgrounds some similarities can be observed in transition economies. Organisational culture is influenced by the fact that a lot of entrepreneurial activities are taking place in parallel economy in transition societies which is due to previously prevalent conditions forcing people to find alternative means for profitable economic activities. Dana and Dana (2003) stipulate three forms of economic activities which can coexist in parallel economies: informal, internal and covert. People have found means to survive in transition economies and have come to adequate entrepreneurship despite many restrictions of communist law.

Scarlat (2005) suggests the model of four basic types of economic systems: economy of monopoly, free market economy, economy of command and »social market« economy with private or state ownership and centralised or decentralised business management. He argues that the association "private ownership" & "decentralised management" is typical for "market economy" while the association "state ownership" & "centralised management" defines "the command economy" of the communist/socialist countries. Two more associations are shown in the model, namely "private ownership" & "centralised management" defining the economy of monopoly and "state ownership" & "decentralised management" introducing the so-called "social-market" economy. Scarlat (2005) further claims that the match between ownership and management is only the background for an efficient economic system. In his opinion, for countries in transition – as Romania – the government is less and less an economic actor but a crucial rule maker. Accordingly, the government should become the guard and guarantor of free-market economic system.

### **3. Conative behaviour patterns**

Lipicnik et al.(2006) claim that relative constancy of behaviour patterns of any individual makes it possible to predict how he/she will react in given situation. Obviously, errors occur in predicting human behaviour, but the concept of conation helps us understand the influence of an individual on organisational change and vice versa.

Lipicnik (2006) recommends the following three assessment methods: Ichak Adizes ([www.adizes.com](http://www.adizes.com)), R. Meredith Belbin ([www.belbin.com](http://www.belbin.com)) and Kathy Kolbe ([www.kolbe.com](http://www.kolbe.com)). The purpose of this article is not to number vast pool of organisational learning studies, but to add conative part into organisational change equation, especially in transition economies. Used assessment tool to measure individual conative style in our study was Kolbe Index™ ([www.kolbe.com](http://www.kolbe.com)).

Conation is difficult to separate from cognition, emotion and behaviour (Snow, 1989) as conative components are often interweaved when measuring cognition or emotion. The Wechsler scales of intelligence include a conative component (Cooper, 1997; Gregory, 1998). Goleman's construct of emotional intelligence includes both affective (e.g. empathy, optimism, and managing

emotions) and conative (e.g. setting goals, and self-regulation) components (Goleman, 1995). On the other hand, conation has cognitive and affective, as well as volitional, components (Gollwitzer, 1990; Snow & Swanson, 1992).

Conation is an emerging concept which can help us to understand individuals reactions, especially in situations of cultural changes enhanced by transition from administrative to market economies. Some authors (Snow, Corno & Jackson, 1996; Atman, 1987; Huiitt 1999; Kolbe, 1997) have renewed interest in the concept of a tripartite theory of the mind (cognition, affection, conation). Conative part is based on the domain of the “practical mind” which was according to Kolbe (Kolbe, 1997) first mentioned by Aristotle, Plato, Augustine and Spinoza. There are several definitions of conation which can be defined as:

- use of will, or freedom to make choices about what to do (Kane, 1985; Mischel, 1996);
- proactive aspect of behaviour (as opposed to reactive or habitual), which is the personal, intentional, planful, deliberate, goal-oriented, or striving component of motivation (Baumeister et al., 1998; Emmons, 1986);
- the tendency to take and maintain purposive action or direction toward goals (Snow, Corno & Jackson, 1996);
- the achievement aspect of ability, the process through which we fulfil our goals (Kolbe, 1997).

In Kolbe’s formulation, it is the combination of the striving instinct, reason, and targeted goals that results in different levels of commitment and action (Kolbe, 2003). However, the concept of conation causes some problems due to its close connection with affection and cognition. To summarize several definitions, conation can be defined as volitional steering of action toward some goal.

Kolbe (1997) developed the Kolbe Index™ which identifies four conative modes of action, albeit with different intensity.

Four modes can be determined with the Kolbe A™ Index:

- FF - Fact Finder (instincts to probe, refine and simplify).

An individual who scores high (7 to 10) in *Fact Finder* will most likely succeed at tasks which require an individual to: probe, research, formalize, allocate, deliberate, prioritise, define, prove, specify, calculate, inquire, and evaluate.

- FT - Follow Thru (instincts to organize, reform and adapt).

An individual who scores high (7 to 10) in *Follow Thru* will most likely succeed at tasks which require an individual to: structure, consolidate, translate, prepare, discipline, coordinate, arrange, integrate, schedule, plan, budget, and chart.

- QS - Quick Start (instincts to improvise, revise and stabilize).

An individual who scores high (7 to 10) in *Quick Start* will most likely succeed at tasks which require an individual to: invent, brainstorm, originate, devise, challenge, contrive, risk, play, reform, improvise, promote, and intuit.

- IM - Implementor (instincts to construct, renovate and envision).

An individual who scores high (7 to 10) in *Implementer* will most likely succeed at tasks which require an individual to: form, mould, demonstrate, craft, shape, put together, build, render, construct, fix, repair, and practice.

The degree of intensity each individual has in an Action Mode is defined on a scale from 1 to 10 (Kolbe, 1997). Each mode has three Zones of Operation on a scale of 1-10 (Kolbe, 2004) the preventive zone (1-3 on the scale), in which one prevents problems through its use; the responsive zone (4-6 on the scale), in which one acts in an accommodating way; and the initiative zone (7-10 on the scale), in which one initiates solutions.

The Kolbe A™ Index has become popular for different business applications, such as career development, interpersonal relationship management, personnel selection, team management, consulting and training (Wongchai, 2003).

The Kolbe A™ Index is a forced-choice instrument that requires subjects to choose two from four answers, which most and least likely respond to 36 single-sentence problem-solving or behavioural scenarios (Kolbe, 2003). The decision to use the Kolbe instrument was made on the basis of reliability and validity for which the Kolbe Statistical Handbook (Kolbe, 2003) presents a strong argument.

The Kolbe B™ Index, meanwhile, measures an individual's job-related self-expectations. When an individual tries to live up to false self-expectations, strain occurs. Strain is one of the measures of conative stress. Strain on the job is identified by comparing Kolbe A™ Index results to Kolbe B™ Index results. For the purposes of this study, strain was measured if there was a difference of 4 or more between Kolbe A™ Index and Kolbe B™ Index results in any mode. The Kolbe A™ Index measures innate, unchangeable conative entrepreneurial competencies and Kolbe B™ Index measures the level of adaptation.

#### **4. The case study of Slovenian SME company**

The case of Slovenia has some potential value to other Central European transition economies as there are similar aspects of organisational culture change in transition processes.

The study of conative behaviour patterns was conducted in 2004 in a company with 28 employees and four million Euros in revenues at the time of quality upgrading, i.e. process and system regulation, and setting new strategy. Entrepreneurial owner who successfully implemented his ideas into practice realised that existing structure, processes, planning, and controlling were no longer sufficient for future growth. He realised that one of the key challenges was how to transform the organisational culture and promote change in order to survive in ever-changing economic environment.

Conative behavioural patterns were tested at three levels. First level was "top management", second level was "top and middle management" and third level was "all employees". Three employees were excluded from further analysis because they were "in Transition" and their natural instinctive abilities could not be recognized. Transition can occur when an individual is under extreme pressure to change or conform at work or at home, causing the individual to experience stress. Some people temporarily lose their ability to express or even recognize their own instinctive abilities (Kolbe Corporation, 1999).

With Kolbe A™ Index a diverse mix of instinctive talent (conative behaviour) was measured. It is considered that having this diversity, or synergy, means the product of the team's combined efforts will be more significant than the individual members' effort alone (Kolbe Corporation, 1999).

According to Kolbe (Kolbe, 2003) a synergistic team will exhibit a natural vitality and strong drive to move forward toward established goals. Ideal synergy

exists when cumulatively the team's natural energy is 25% preventive, 50% responsive, and 25% initiating. Synergistic teams are generally more successful because there is enough "push and pull" from members' differing natural strengths and ways of acting (prevention and initiation zones) to create a balanced opposition of efforts. An ideal team has enough members that can bridge the difference, evaluate and accommodate actions of both sides (response zone), and help to create a mutually acceptable solution in the creative problem-solving process. As a team's dynamics shift away from ideal synergy, its interactions become less productive in relation to its actual goals.

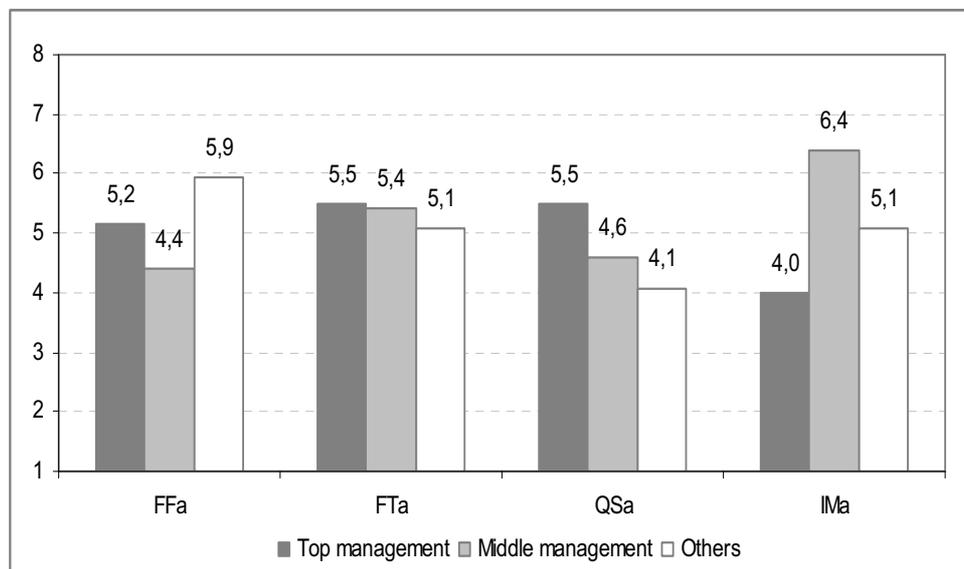
#### 4.1. Descriptive statistics

Table 1: Kolbe™ A results

		FFa	FTa	QSa	IMa
Top management	Mean	5,17	5,50	5,50	4,00
	Std. Deviation	1,33	1,22	2,26	1,26
Middle management	Mean	4,40	5,40	4,60	6,40
	Std. Deviation	1,67	0,89	1,14	0,89
Others	Mean	5,93	5,07	4,07	5,07
	Std. Deviation	1,59	1,59	1,49	1,86
Total	Mean	5,44	5,24	4,52	5,08
	Std. Deviation	1,61	1,36	1,69	1,73

Source: Authors

Table 2: Kolbe™ A mean



Source: Authors

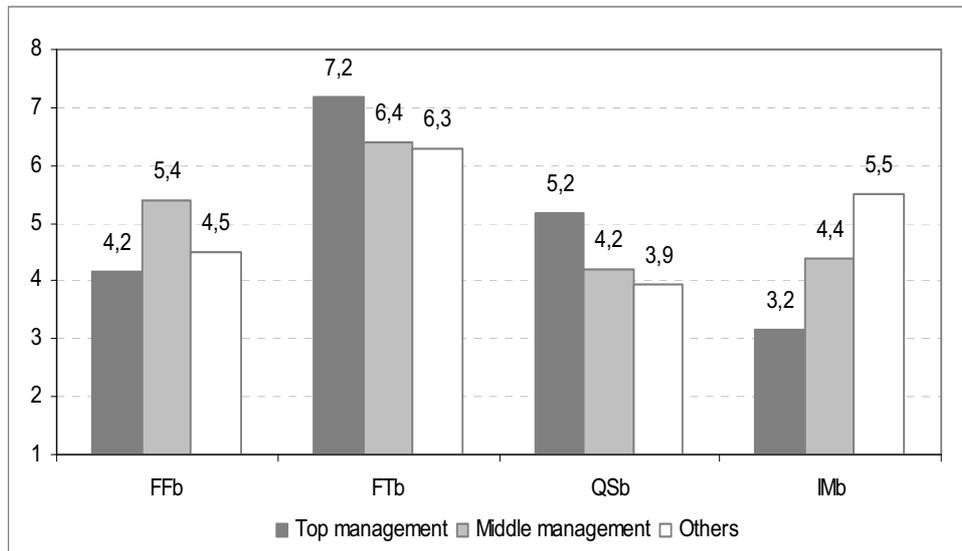
Natural talents measured by Kolbe™ A Index are in all four modes represented very similarly. All results are in responsive action zone. Top management exhibits the lowest deviation amongst natural talents. FT and QS natural talents are the highest (both results are 5,5). It is expected that IM result is the lowest (4,0), as they are in accommodating mode gravitating towards preventive mode. Standard deviation in top management results is highest in QS (Std. Deviation = 2,26). Middle management exhibits the highest result in IM action mode (6,4) meaning that it is almost in initiative action zone because of FF (4,0). In this group is similarity the highest in FT and IM action modes (Std. Deviation = 0,89). The rest of employees have the most expressed FF action mode, and the least expressed QS. Dispersion is the highest in IM (Std. Deviation = 1,86).

Table 3: Kolbe™ B results

		FFb	FTb	QSb	IMb
Top management	Mean	4,17	7,17	5,17	3,17
	Std. Deviation	1,17	0,98	2,40	1,47
Middle management	Mean	5,40	6,40	4,20	4,40
	Std. Deviation	1,95	1,14	1,92	1,14
Others	Mean	4,50	6,29	3,93	5,50
	Std. Deviation	0,94	1,54	1,77	1,79
Total	Mean	4,60	6,52	4,28	4,72
	Std. Deviation	1,26	1,36	1,95	1,84

Source: Authors

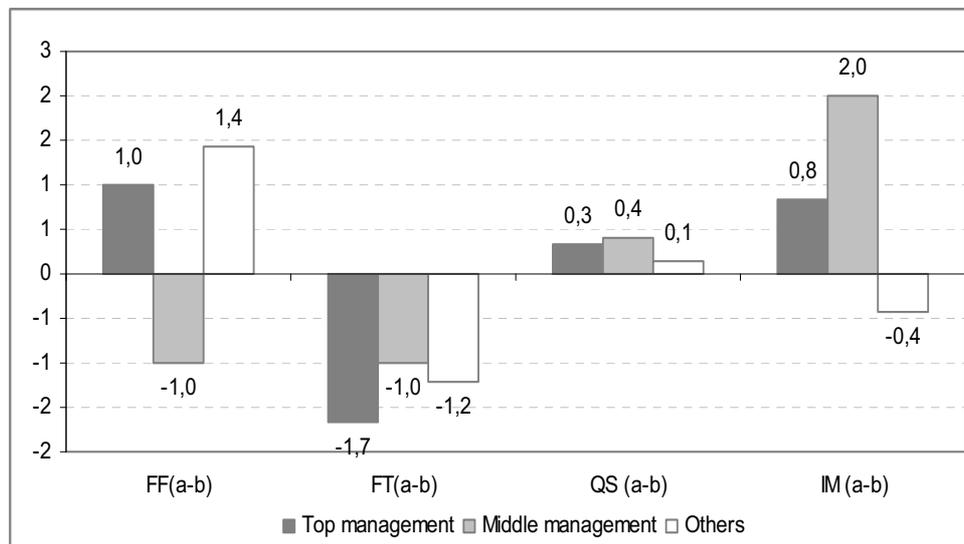
Table 4: Kolbe™ B mean



Source: Authors

The highest score measured by Kolbe™B Index could be spotted in FT action mode in all three groups. The least expressed is QS action mode, though QS action mode has the highest dispersion (Std. Deviation=1,95). Top management has most expressed FT action mode amongst all three groups, but with homogeneous results (Std. Deviation = 0,98). The least expressed action mode in top management group is IM. Standard deviation is the highest in QS (Std. Deviation = 2,4). Middle management and others have similar mean scores in FT and OS action mode. However, middle management has more expressed FF action mode, while others have more expressed IM action mode. Standard deviation at middle management group is the highest in FF action mode (Std. Deviation = 1,96), meanwhile it is the lowest in FF action mode (Std. Deviation = 0,94).

Table 5: Differences amongst natural talents (Kolbe™A Index) and self expectations (Kolbe™ B Index)



Source: Authors

Table 5 shows that differences amongst natural talents (measured by Kolbe™ A) and self expectations (measured by Kolbe™ B) are the lowest in QS action mode. High differences are in all three groups in FT action mode, which is especially evident at top management. Differences are smilingly high in FF action mode in all three groups. The highest differences are present in IM in middle management.

With Paired Samples t test we tested statistical significance amongst natural talents and self expectations in all three groups. Paired Samples t test shows possible difference amongst mean results. Due to small sample units we additionally tested differences with nonparametric test (Wilcoxon Signed Ranks Test).

Table 6: Paired Samples t test

			Paired Differences					t	df	Sig. (2-tailed)
			Mean	Std. Dev.	Std. Error Mean	95% Confidence Interval of the Difference				
						Lower	Upper			
Top Mgt.	Pair 1	FFa - FFb	1,000	0,6324	0,2582	0,336	1,663	3,873	5	0,012
	Pair 2	FTa - FTb	-1,666	2,1602	0,8819	-3,933	0,600	-1,890	5	0,117
	Pair 3	QSa - Qsb	0,333	2,5819	1,0540	-2,370	3,042	0,316	5	0,765
	Pair 4	IMa - IMb	0,833	1,6020	0,6540	-0,847	2,514	1,274	5	0,259
Middle Mgt.	Pair 1	FFa - FFb	-1,000	1,4142	0,6324	-2,755	0,755	-1,581	4	0,189
	Pair 2	FTa - FTb	-1,000	1,4142	0,6324	-2,755	0,755	-1,581	4	0,189
	Pair 3	QSa - Qsb	0,400	1,1401	0,5099	-1,015	1,815	0,784	4	0,477
	Pair 4	IMa - IMb	2,000	1,2247	0,5477	0,479	3,520	3,651	4	0,022
Others	Pair 1	FFa - FFb	1,428	1,6968	0,4534	0,448	2,408	3,150	13	0,008
	Pair 2	FTa - FTb	-1,214	1,8471	0,4936	-2,280	-0,147	-2,460	13	0,029
	Pair 3	QSa - Qsb	0,142	1,4600	0,3902	-0,700	0,985	0,366	13	0,72
	Pair 4	IMa - IMb	-0,428	1,9499	0,5211	-1,554	0,697	-0,822	13	0,426

Source: Authors

Table 7: Wilcoxon Signed Ranks Test

		FFb - FFa	FTb - FTa	Qsb - QSa	IMb - IMa
Top management	Z	-2,121	-1,581	0,000	-1,186
	Asymp. Sig. (2-tailed)	0,034	0,114	1,000	0,236
Middle management	Z	-1,414	-1,512	- 0,816	-2,041
	Asymp. Sig. (2-tailed)	0,157	0,131	0,414	0,041
Others	Z	-2,540	-2,172	- 0,428	-1,085
	Asymp. Sig. (2-tailed)	0,011	0,030	,668	0,278

Source: Authors

Paired Samles test and Wilcoxon Signed Ranks Test ( $p < 0,05$ ) confirm that in top management group the natural talent is higher in FF action mode than self expected one. In middle management both tests confirm that QS natural talent is higher than self expected one ( $P < 0,05$ ). In group others both tests confirm that FF natural talent is higher than self expected one and FT self expected higher than natural one.

The following Tables 8 to 10 show distribution of conative behavioural patterns of three studied groups: top management (8 people), top and middle management (11 people) and all employees (25 out of 28 people).

Table 8: Distribution of conative behavioural styles of top management

	Fact Finder	Follow Thru	Quick Start	Implimenter
Prevent	17%	0%	33%	33%
Respond	66%	83%	34%	67%
Initiate	17%	17%	33%	0%
	100%	100%	100%	100%

Source: Authors

Table 9: Distribution of conative behavioural styles of top and middle management

	Fact Finder	Follow Thru	Quick Start	Implimenter
Prevent	18%	0%	27%	18%
Respond	55%	91%	55%	64%
Initiate	27%	9%	18%	18%
	100%	100%	100%	100%

Source: Authors

Table 10: Distribution of conative behavioural styles of all employees

	Fact Finder	Follow Thru	Quick Start	Implimenter
Prevent	16%	4%	48%	16%
Respond	52%	84%	40%	52%
Initiate	32%	12%	12%	32%
	100%	100%	100%	100%

Source: Authors

#### 4.2. Discussion

Natural talents, difference amongst natural talents and self expected behaviour in analysed company suggests that change of organisational culture would be more difficult and time consuming as initially expected. Willingness to implement changes was at least to some level supported in top management group by their natural talents and their self expectations (see Tables 1, 3 and 7) but is fading away by adding middle managers and others to study group (see Tables 8 and 9). Study shows that standard deviation is the highest in top management group in QS action mode, meaning that some individuals had very high inclination towards changes, but not all of them. Top management would have problems in convincing middle managers and especially others in necessity of changes, because to many employees in those two groups had natural talents in QS action mode in preventive operating zone. These employees with their natural talent in QS action mode in responsive operating zone would follow, but number of them is not high enough, especially in group top managers and others. It means that they would reject changes. Moreover their self expected behaviour was even more inclined toward preventing changes. In other words, the study suggests that middle managers and others did not have enough natural talents for changes and their self expectations were even strengthening organisational changes prevention.

Natural talents in FF action mode even strengthen above mentioned conclusion as most of employees in all three groups were in responsive zones of operation or in initiative one (see Tables 7, 8 and 9). It means that they were inclined towards analysing, probing, researching, formalizing, specifying, calculating, inquiring, and evaluating (see Table 1). Most willing, without focusing on unnecessary details, to implement changes was middle management group (their mean natural talent FF result is the lowest). On the other hand, all three groups were adapting in FF action mode in which differences between natural talents and self expected behaviour are high (see Table 5).

The study suggests that while implementing new organisational culture the team as a whole was stuck in indecision and inactivity because no one was taking stand on any issue in either direction. Unfortunately, everyone was willing to accommodate others and no one made a directed move toward progress.

Nowadays, almost three years later, the company is still struggling with organisational culture change.

## 5. Conclusions

The study was based on a small sample, a characteristic that limits the generalisation of the findings. The sample of three groups of a small and medium enterprise (SME) in at that time post-transition economy of Slovenia can be different from samples in market economies which may impact the results. The conclusions of our analyses should be interpreted with care when generalizing as we have analysed only one company.

This being said, however, one could argue that even though the Slovene sample may not represent the general population, this case study is still valuable and the results provide insightful directions for advanced studies in this area. The market economy seems to put pressure on management to change or conform at work and adapting to a new economy is obviously causing them a great deal of conative stress. Nowadays, managers need different conative competencies from those valued and required in previous economic system, in which the accommodating mode in all action modes suited them best.

Former political and economic systems has left a unique legacy in all transition economies of Central Europe by creating a peculiar cultural syndrome at the corporate level with its distinct set of values, norms, and standards based on the notion of the Communist theoretical conception of collectivism (Greenberg & Erdinc, 1999). In changing "the way we do things around here" employees' natural talents should be considered as shown in the case study.

Several studies (Antončič, Scarlat, 2005; Douglas et al., 2003; Antončič & Hisrich, 2000) suggest that there are minor differences in corporate entrepreneurship and alliance item means between Slovenia and Romania which could be due to the fact that transition to market-based economy has followed similar paths in past two decades (democracy, private ownership, competition, efforts to join the EU, etc.).

Development of new organisational culture which generates innovation and creation of friendly environment, improved procedures, team work, mutual support and fair appraisal of individual performances (Grigoruta & Corodeanu, 2005) should become a top priority of practitioners and policy makers in Romania, Slovenia and also in other post-transition economies of Central Europe.

## REFERENCES

- Aggyris C., Schon D. (1978). *Organizational Learning: A Theory of Action Perspective*, Addison-Wesley, Reading, MA
- Antončič B., Hisrich R.D. (2000). "Intrapreneurship modeling in transition economies: A comparison of Slovenia and the United States", *Journal of Developmental Entrepreneurship*, Vol. 5., No. 21, p .21-40
- Antončič B., Scarlat C. (2005). *Corporate entrepreneurship and organizational performance: A comparison between Slovenia and Romania*, Managing the Process of Globalisation in New and Upcoming EU Members Proceedings of the 6th International Conference of the Faculty of Management Koper, Congress Centre Bernardin, Slovenia, 24–26 November 2005
- Armstrong M. (2003). *Human resource management practise*, Cambrian Printers Ltd., Aberystwyth, Wales

- Atman K.S. (1987). "The role of conation (striving) in the distance learning enterprise", *The American Journal of Distance Education*, Vol. 1, No. 1, p. 14-24
- Baumeister R. F., Bratslavsky E., Muraven M., Tice, D.M., (1998). "Ego depletion: Is the active self a limited resource?" *Journal of Personality and Social Psychology*, 74, 5, pp. 1252-1265
- Blejer I. M., Škreb M. (2001). *Transition: first decade*, MIT Press, Cambridge.
- Carr D.K., Hard K.J., Trahant W.J. (1996). *Managing the Change Process: A Field Book for Change Agents, Consultants, Team Leaders, and Reengineering Managers*, McGraw-Hill, New York
- Commission of the European Communities (1994). *European observatory for SMEs – comments by the commission on the 2nd Annual report*, Document Number: COM(94)352
- Cooper S. (1997). *The clinical use and interpretation of the Wechsler Intelligence Scale for children*, 3rd ed., Springfield, Charles C. Thomas Publisher
- Dana L.P., Dana T. (2003). "Management and enterprise development in post-communist economies", *International Journal of Management and Enterprise Development*, Vol.1, No. 1, p.45-54
- Derleth J. W. (2000). *The transition in Central and Eastern European politics*, Prentice Hall, New Jersey
- Dixon N. (1994). *The Organizational Learning Cycle: How Can We Learn Collectively*, McGraw-Hill, Maidenhead
- Douglas E.J., Antončič B., Hisrich R.D., McLaughlin T.A. (2003). "Intrapreneurship in Australian, US and Slovenian firms: presented at Babson College/Kauffman Foundation Research Conference – Summaries, June 4-8, 2003, Welleseley: Babson College
- Emmons R. (1986). "Personal strivings: An approach to personality and subjective well-being", *Journal of Personality and Social Psychology*, 51 pp. 1058-1068
- European Bank for Reconstruction and Development (1999). *Transition report 1999: Ten years of transition*, London
- Frese M., Kring W., Soose A., Zempel, J. (1996). "Personal initiative at work: differences between East and West Germany", *Academy of Management Journal*, Vol. 39, p. 37-83
- Ghosal S., Bartlett C. A. (1998). *The individualized corporation*, Random House UK Ltd., London
- Glomb T.M. and Liao H. (2003). "Interpersonal aggression in work groups: social influence, reciprocal, and individual effects", *Academy of Management Journal*, Vol. 46, pp. 486-96
- Goleman D. (1995). *Emotional Intelligence: Why It Can Matter More Than IQ for Character, Health and Lifelong Achievement*, : Bantam, New York
- Gollwitzer P. (1990). *Action phases and mindsets*, IN: Higgins, E. and Sorrentino, R. (eds.), *Handbook of Motivation and Cognition: Foundations of Social Behavior*, Vol. 2, p. 53-92
- Grancelli B. (ed.) (1995). *Social Change and Modernization: Lessons from Eastern Europe*, Walter de Gruyter, New York
- Greenberg E., Erdinc D. (2005). "Corporate culture in transition: case study evidence from Bulgaria", *Journal of Management Development*, Vol.24, No.5, p. 421-442
- Gregory R. (1998). *Foundations of Intellectual Assessment: The Wais-III and Other Tests in Clinical Practice*, Allyn & Bacon, Boston

- Grigoruta M. V., Corodeanu D., T. (2005). "Managing the Process of Globalisation in New and Upcoming EU Members", Proceedings of the 6th International Conference of the Faculty of Management Koper Congress Centre Bernardin, Slovenia, 24–26 November 2005
- Guerra J., Martinez I., Munduate L. and Medina F., (2005). " A contingency perspective on the study of the consequences of conflict types: the role of organizational culture", *European Journal of Work and Organizational Psychology*, Vol. 14 No.2., pp. 157-76
- Hancock M. D., Logue J. (Ed.) (2000). *Transitions to capitalism and democracy in Russia and Central Europe*, Praeger, London
- Huitt W. (1999). *Conation as an important factor of mind*, Educational Psychology Interactive, State University, Valdosta, GA.
- Jankova E. (1998). "The transformative corporatism of Eastern Europe", *East European Politics and Societies*, Vol. 12, p. 222-58
- Jashapara A. (2003). "Cognition, culture and competition: an empirical test of the learning organization", *The Learning Organization*, Vol. 10, No. 1, p. 31-50
- Kane R., (1985). *Free will and values* (Albany, State University of New York Press
- Kim D.H. (1993). "The link between individual and organizational learning", *Sloan Management Review*, Fall, p. 37-50
- Kolbe K. (1997). *The conative connection*, Addison-Wesley, Reading, MA
- Kolbe Corporation (1999). *Kolbe bottom lines*, Phoenix, AZ, Kolbe Corporation
- Kolbe K. (2003). *Kolbe Statistical Handbook* (Phoenix AZ, Kolbe Corporation, 2003), Retrieved September 2006, from <http://www.kolbe.com/>.
- Kovač J., Jasenko M. (2004). "The values, objectives and management styles of managers in Slovenia", *Management*, Vol. 9, 2, p. 35-51
- Kovač D., Bertonecelj A., Bulc V., Kosir L.G. (2006). "Human resource development from the aspect of evolution of business environment", *Proceedings of the Industrial Relations in Europe Conference 2006, University of Ljubljana*, Ljubljana, Slovenia, August 29-September 2.
- Kotter J.P., Heskett J.L.. (1992). *Corporate Culture and Performance*, The Free Press, New York
- Lang R., Müller S. (2000). Transformational management in the transformation process of East Germany, IN: Lang R., Kovac J., Bernik M. (eds.), *Management in transitional processes, Moderna Organizacija*, Kranj
- Lang R., Baitsch Pawlowsky R. (eds.) (2001). *Wirtschaftsethik in Mittel und Osteuropa, in: Arbeit, Organisation und Personal im Transformationsprozess*. Band 13, Rainer Hampp Verlag, Mering
- Lipičnik B., Božac G.B., Mihelič K.K. (2006). "A comparative study of Pula (Croatia) and Ljubljana (Slovenia) business students' behaviour patterns", *Management*, Vol. 11, No. 2, p. 29-52
- Luthans F., Riolli L.T. (1997). "Albania and the Bora Company: lessons learned before the recent chaos", *Academy of Management Executive*, Vol. 11, p. 61-72
- Mischel W. (1996). "From good intentions to willpower", in P. Gollwitzer & J. Bargh (eds), *The psychology of action* (New York, Guilford Press, pp. 197-218
- Mourier P., Smith M.E. (2001). *Conquering Organizational Change: How to Succeed Where Most Companies Fail*, CEP Press, Atlanta, GA

- Morrison A. (2000). "Entrepreneurship: what triggers it?" *International Journal of Entrepreneurial Behaviour&Research* Vol. 6, No.2, p.59–71
- Mueller S.L. and Goić S., (2002). "Entrepreneurial potential in transition economies: A view from tomorrow's leaders", *Journal of Developmental Entrepreneurship*,2002, FindArticles.com, retrieved from [http://findarticles.com/p/articles/mi\\_qa3906/is\\_200212/ai\\_n9153289](http://findarticles.com/p/articles/mi_qa3906/is_200212/ai_n9153289) on 13.8.2007
- Nuti D. M., Uvalič M. (Ed.) (2003). *Post-communist transition to a market economy*, Longo, Ravenna
- Puffer S. (1993). "A riddle wrapped in an enigma: demystifying Russian managerial motivation", *European Management Journal*, Vol. 11 No. 4, p. 473-80
- Pučko D. (2005). "Business ethic in the Slovenian economy", *Management*, Vol.5, No. 1, p 1-20
- Robbins S.P. (1996). *Organizational Behaviour*, 7th ed, Prentice Hall, Englewood Cliffs, NY
- Robinson T., Clemson B and Ve Ketaing C. (1997). "Development of high performance organizational learning units", *The Learning Organization*, Vol. 4 No. 5, pp. 228-34
- Salancik G.R. and Pfeffer J.. (1978). "A Social information processing approach to job attitudes and task design", *Administrative Science Quarterly*, Vol. 23, pp. 224-53
- Scarlat C. (2005). *Aspects of the Romanian transition*, Managing the Process of Globalisation in New and Upcoming EU Members, Proceedings of the 6th International Conference of the Faculty of Management Koper, Congress Centre Bernardin, Slovenia, 24–26 November 2005
- Schein E.H. (2004). *Organizational Culture and Leadership*, 3<sup>rd</sup> ed., Jossey-Bass, San Francisco, CA
- Schneider S.C., Barsoux J.-L. (1997). *Managing Across Cultures*, Prentice-Hall, Englewood Cliffs
- Schönfeld R. (2000). *Structural changes in transforming south-eastern Europe*, Sudosteuropa-Gesellschaft, München
- Smith M.E. (2002). "Implementing organizational change: correlates of success and failure", *Performance Improvement Quarterly*, Vol.15, No 1, p. 67-83
- Snow R. (1989). "Toward assessment of cognitive and conative structures in learning", *Educational Researcher*, Vol.18, No.9, p.8-14
- Snow R., Swanson, J. (1992). "Instructional psychology: aptitude, adaptation, and assessment", *Annual Review of Psychology*, Vol. 43, No. 1, p.583-626
- Snow R.E., Corno, L., Jackson, D. (1996). *Individual differences in affective and conative functions*, IN: Berlinger D.C., Calfee, R.C. (eds.), *Handbook of Educational Psychology*, New York: Macmillan Reference Books, p. 243-310
- Trice H.M. (1988). "Rites and ceremonials in organizational culture", IN: Bacharach S.B., Mitchell, S.M. (eds), *Perspectives on Organizational Sociology: Theory and Research*, Vol.4, JAI Press, Greenwich
- Trice H.M., Beyer J.M. (1993). *Culture of Work Organizations*, Prentice Hall, Englewood Cliffs
- Van Fleet D.D. and Griffin R.W. (2006). Dysfunctional organization culture, *Journal of Managerial Psychology*, Vol. 21 No. 8., pp. 698-708
- Mariana V., Verboncu I., Duca I., Ștefănescu A., Gherghina R., Dudian M., Ciocîrlan D., Dobrin C., Dobre M. (2007). The Corporate Social Responsibility Practices in Romania in the context of Sustainable Development Principles Theme: Entrepreneurship and inter-firm relationships, *Joint Congress of the European Regional Science Association (47th Congress) and ASRDLF*

(Association de Science Régionale de Langue Française, 44th Congress) PARIS - August 29th - September 2nd, 2007

Wade M. D. (2003). "Differences in values, practices, and systems among Hungarian managers and Western expatriates", *Journal of World Business*, Vol. 38, No. 3, Elsevier, London

Wongchai, S. (2003). "The ability of the Kolbe A Index action modes to predict learners' attitudes and achievements within a web-based training context", A Phd dissertation, M.S. Texas A&M University

Yu J., Stough R. R. (2006). "The determinants of entrepreneurship development in China", *International Journal of Management and Enterprise Development*, Vol.3, No. 1/2, p.30-52

## HAPPINESS AND ITS SOCIO-ECONOMICS FACTORS. OVERVIEW AND ECONOMETRIC ESTIMATION

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**Abstract.** This article synthesizes the main results of some specialty studies of the economical profiled magazines regarding the individual happiness and the economic - social factors which influence it. Using the cluster analysis for the classification of 31 European countries according to the Human Development Index (HDI) and the happiness index (HPI) has resulted four groups, homogeneous on the inside and different one from another. The dates were extracted from the 2006 Human Development Report and from the 2006 **nef** report. Throughout three econometric models we have tested the influence of HDI, GINI and the number of marriages of 1000 persons over some indicators which synthesize the life satisfaction.

**JEL Classification:** A13, C50

**Keywords:** life satisfaction, Human Development Index, Happy Planet Index, cluster analysis, OLS

### 1. Introduction

This study makes a classification of the EU 27 member states, of Croatia (an EU adhering candidate), of three EFTA (European Free Trade Association) member countries: Iceland, Norway, Switzerland, and also deals with the finding of some factors which influence happiness. In 2005, the year from which the information of this article dates, the European Union had 25 state members and Bulgaria, Romania and Croatia were running for EU adhesion.

The information gathered in this study is from the 2006 Human Development Rapport made by UNDP (United Nation Development Programme), from the 2006 "The (Un) Happy Planet" rapport made by **nef** (New Economic Foundation), from the studies made by Eurostat and also by World Bank. The analyzed variables refer to two lines of study and interest such as human development and happiness of the above mentioned European countries.

The 31 analyzed states are classified upon two complex variables: HDI (Human Development Index) and HPI (Happy Planet Index), making four classes for each case. Another aspect of this study will focus on finding the influence

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factors of happiness. Some authors (Ferrer-i-Carbonella, 2005) consider the notions of happiness, welfare and life satisfaction as being equivalent. This matter of happiness, welfare and personal satisfaction doesn't represent a novelty for the world of science, being dealt by economists, psychologists, sociologists trying to solve "the mystery", to find out what makes us happier or unhappier. The following articles make reference to different factors of influence, but also explain the concept of "happiness". Thus, Binswanger (2006) adds two other concepts, besides those already existent in literature: hedonic treadmill (a man's work and efforts in order to be happy), positional treadmill (individual happiness in rapport with of others), multi-option treadmill (the multitude of options of a person to spend his money and time) and time-saving treadmill (the technological innovations which were made to save time, don't estrange time pressure from the individual). All these four modalities of the lifestyle have an effect upon the happiness of an individual. There is a tendency of people to relate to a reference group, to its way of life, and as much as they struggle for happiness, the less happy they are, giving them less time for personal pleasures. Keely (2005) analyses welfare as a dependent function of the income growth and the variety of consumer goods. The conclusion they reach is that, although income and the variety of products are growing continuously in the developed countries, this growth doesn't lead to a likewise evolution of happiness up to a certain point.

Alesina (2004) had studied the inequality effect in society over the individual happiness, making a comparison between Europeans and Americans, reaching to the conclusion that individuals have the tendency to consider themselves less happy when a bigger inequality is shown between social classes. Graham et al. (2004) had shown on a sample number of persons from Russia that there are many different elements which affect human welfare, among which one part is determinate by individual behavior: self esteem, optimism and others are determinate by socio-economic and demographic variables: marital status modifications, income fluctuations, educational level. People with a high level of happiness have more chances to enlarge their income in the future.

## 2. Representative indicators – HDI, GINI, HPI

HDI, Human Development Index, represents an important alternative of other traditional indicators for measuring the human development level, for example the GDP or the adjusted GDP. For further, more detailed explanations see Sagar & Najam (1998). In accordance with the UNDP (United Nations Development Programme), the institution which elaborated the methodology of calculus of this index, "the development is much more than the extension of income and welfare [...]", it is a extension, a process of enlargement of the choice horizon that a man can do (UNDP 1990, pp. 10). This process is a continuous change and adaptation, but three characteristics are being emphasized in the choices made by men who are constant, and the final result of these choices must be a longer and healthier life and also a decent standard of life which can be made only through a proper education. The first stage assumes the transformation of an  $x$  variable thus the measurement unit doesn't influence the analysis:

$$x - index = \frac{x - \min(x)}{\max(x) - \min(x)}$$

The next stage deals with the HDI calculus following the formula:

$$HDI = \frac{LEindex + \frac{2}{3} * ALindex + \frac{1}{3} * GER + GDPindex}{4}$$

*LE* : Life expectancy;

*ALR*: Adult literacy rate;

*CGER*: Combined gross enrollment ratio;

*GDPpc*: GDP per capita at PPP in USD

$$\text{- Life Expectancy Index} = \frac{LE - 25}{85 - 25}$$

$$\text{- Education Index} = \frac{2}{3} * ALindex + \frac{1}{3} * GER$$

$$ALindex = \frac{ALR - 0}{100 - 0}$$

*ALR*- Adult Literacy Rate- the percent attributed to people older than 15, who can read and write a short description of their everyday life.

$$GER = \frac{CGER - 0}{100 - 0}$$

*CGER*- Combined gross enrollment ratio- the percent attributed to the number of pupils enrolled in primary, secondary and high school from the total number of pupils who should be enrolled in all three cycles, regarding their age.

$$\text{- GDP index} = \frac{\log(GDPpc) - \log(100)}{\log(40000) - \log(100)} \text{ (GDP index)}$$

*GDP<sub>pc</sub>* - GDP per capita at PPP- GDP per capita calculated in a standard currency (PPP- purchasing power parity).

For each dimension, the value of the indicator is measured on a scale from 0- minimum to 1- maximum. Thus, the life expectancy at birth has a minimum of 25 years and a maximum of 85 years, alphabet level and enrollment are contained in [0, 100]% interval and GDP per capita belongs to [100, 40 000] (UNDP 1997, pp. 122).

HDI calculus, which assumes arithmetic medium of the three components, can't be sustained because this means a perfect substitution between the components (Dessai, 1991). In the present case of determining the level of human development, the country that records a low level of those three components will have a low HDI, and vice versa, which doesn't reflect a real level of development.

Sagar & Najan suggest a new methodology of calculus for HDI by introducing a multiplicative scheme.

The HDR rapport went away from the initial goal, the measure of human development progress, and HDI focuses exclusively on hierarchies and national performances, ignoring the development aspect from a global perspective.

Morse (2004) claims that development is a complex notion which includes social, economic and environmental features and the indicators adherent development must capture this complexity in any context. HDI ignores the natural environment and especially the relationship between the impact of the country's development upon the natural environment and the actual development of this country.

According to the **nef** (new economic foundation) rapport: "The (Un) Happy Planet Index" (July 2006), an improved alternative of HDI is HPI (Happy Planet Index). This new indicator takes into account objective data, but also subjective ones, doesn't use income as a explicit variable and take into consideration the planet's resources which lead to a longer and happier life. The purpose of development is to offer high standards of human welfare taking into account a responsible behavior of the resource consume. HPI reflects the way in which every country of those analyzed (178) fulfills the above mentioned goal.

The happiness index is being calculating according to three indicators: ecological Footprint, life satisfaction and life expectancy. Thus,

$$HPI = \frac{LifeSatisfaction * LifeExpectancy}{EcologicalFootprint}$$

The HPI components are explained as:

a) life satisfaction

The American psychologist Ed DIENER defines the concept of welfare as being composed of three components: feelings, positive and negative experiences, life satisfaction.

Life satisfaction represents the perception of the individual's life. In international researches this evaluation is given by the interviewers' answer to the question: "If you consider your life overall, how satisfied would you say you are nowadays?" (HPI Report, pp.11) on a scale from 0 (not at all satisfied) to 10 (extremely satisfied). Evidently, this method isn't a perfect one, ideally being a subjective approach through a series of questions which would capture much more aspects of the respondent's life. However, this general question is accepted at a worldwide level as a human welfare indicator due to comparing the obtained results with other national statistics.

b) life expectancy at birth

c) ecological Footprint measures the people's impact through the accomplished consume upon the natural environment.

Hypothetical scores which can be obtained by HDI for certain levels of those three components are given in

Table 1. Hypothetical HPI scores:

Table 1. Hypothetical HPI scores

	Life satisfaction	Life expectancy	Footprint	HPI
High well-being/ Acceptable Footprint	7,0	75,0	1,8	61,8
High well-being/ High Footprint	7,0	75,0	5,4	38,0
Low well-being/ Low Footprint	5,0	50,0	0,5	38,0
Reasonable ideal	8,2	82,0	1,5	83,5

Source: HPI Report, pp.14

The GINI coefficient measures the degree of inequality of income levels, representing the relative average difference between everyone's incomes. The coefficient size shows the part of the total income which should be redistributed if it be wanted to obtain an equal distribution of income. The GINI coefficient is a measure of dispersion most used for measuring inequality of income. It is defined as a rate which takes values between 0 and 1: the numerator being representing by the area included between the Lorenz curve of income distribution and the straight line for a uniform distribution of income, and the denominator's area is represented under the straight line of uniform distribution.

The Lorenz curve is a representation of income distribution and shows y % percent of the total income owned by x% of households. A perfect equal distribution of income would be that in which each person has the same income. On a contrary, a perfect unequal distribution would be that in which a person owns the entire income and the others have nothing.

The GINI coefficient is calculated upon the available incomes basis per adult equivalent to all adherent persons, increasingly ordered, in accordance with the relation:

$$Gini = \frac{2}{n^2 \bar{V}} \times \sum_{i=1}^n iV_i - \frac{n+1}{n}$$

$V_i$  = available income per adult equivalent to the adherent person with the order number i (i = 1,2, ...,n),

$\bar{V}$  = average income

n = population number

GINI index is GINI coefficient transposed in percentage (GINI coefficient×100). The values used in this study are those calculated by the United Nations.

The biggest advantage of using GINI is that it is a measure of inequality thought as a rate and not a representative variable at a whole population scale such as the GDP or the GDP per person and it can be used to compare the income distribution in different sectors of activity or countries. The GDP is criticized for the fact that it doesn't capture the changes for the entire population, while GINI shows how the income distribution changed for the wealthy and poor people. The most developed European countries have a coefficient between 0,24 and 0,36 while the coefficient of the United States of America is bigger than 0,4. The Americans confront with a more accentuated inequality concerning the income

distribution. GINI coefficient was estimated between 0.56 and 0.66 for the entire world.

The analysis made upon the 31 European countries used also some demographic variables such as: activity rate, unemployment rate, number of divorces and marriages of 1000 persons and the percentage of smokers/ non-smokers. The data were taken from the studies made by Eurostat.

### **3. Results and debates**

The G8 international forum made of Canada, France, Germany, Italy, Japan, United Kingdom, Russia and USA gathers 65% of economic world power, but also the military one (7 of these countries taking top positions in the most powerful states classification from the military point of view). United Kingdom, USA, Russia and France hold 98% of the declared nuclear weapons.

Although G8 forum members considers themselves to be the most industrialized democracies of the world (the used criteria of classification is GDP), if we take into account other indicators this fact leaves room for discussions.

If HDI would be taken into account as an indicator of ranking industrialized democracies, then the present G8 would just include Canada, Japan and USA, classifying on the last three positions of the most developed 8 states. The other members of G8 would be, in decreasing order of the human development level: Norway, Iceland, Australia, Ireland and Sweden. On the other hand, if G8 would take into consideration the happiest 8 countries of the world and with the lowest negative impact on the natural environment (HPI), then none of the present members would hold the nowadays positions. In the HPI hierarchy these countries take the last places, however Italy is the best ranked, on the 66 place.

For the developed countries, Footprint significantly increases with the GDP and it is the cause for the diminution with 50% of the happiness index, while life expectancy doesn't modify and life satisfaction increases very little. On the other hand, for the states with a low level of development, life satisfaction is the main cause of the modification of HPI level. This means that, at a national level, the most significant increases of welfare are due to a low to moderate income.

#### **The classification of the countries based on HDI**

The countries which are recording high values of the human development level are considered to be the best places for establishing the residence. These states have an excellent healthcare system, GDP/person and a high level of education. In accordance with the latest United Nation rapport, Human Development Report 2006, the first countries are Norway, Ireland and Austria. We might believe that many residents of these countries are very content with their life. But most of the states labeled as being well developed (based on HDI) have a mediocre level of welfare.

Having done the classification based on the HDI variable had resulted 4 groups. The cluster analysis was preferred instead of a simple segmentation because it allows an "optimal" grouping, taking into account the homogeneity of the resulted groups. The groups are being validated through ANOVA analysis (see Table 2).

Table 2. The classification validation 1 – ANOVA for HDI

	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Groups	0.062	3	0.021	194.665	0.000
Within Groups	0.003	27	0.000		
Total	0.065	30			

Source: Author's calculations

Figure 1. HDI Dendrogram

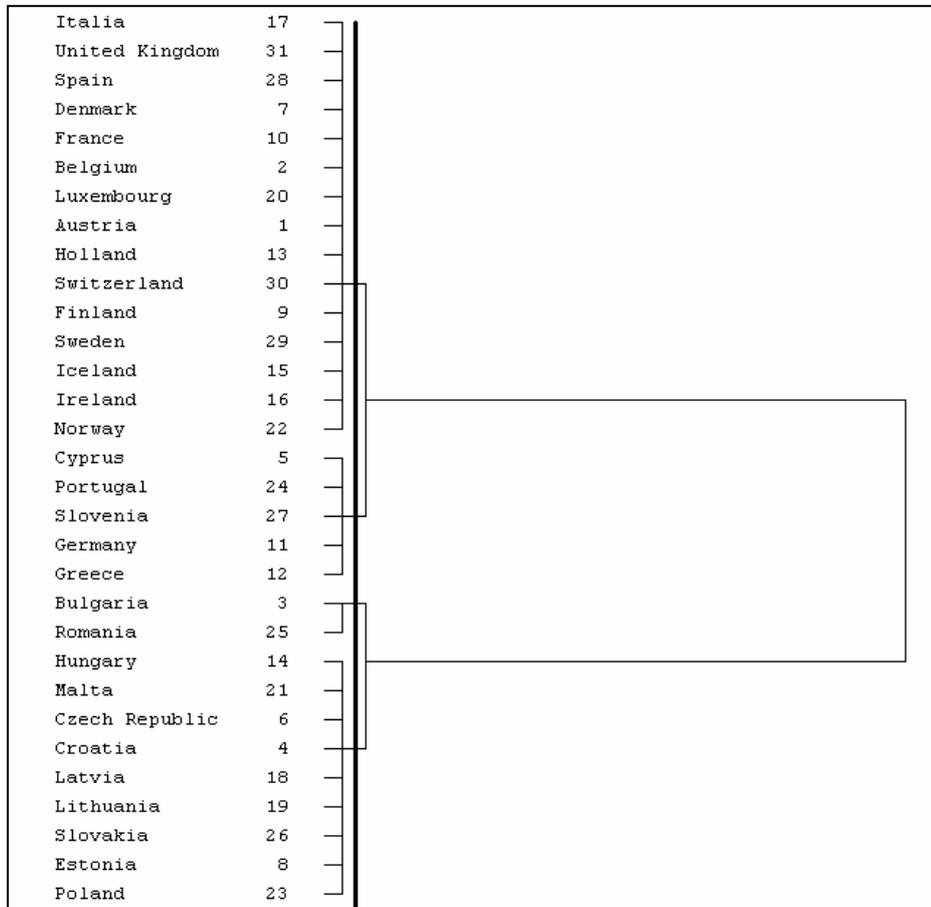


Table 3. The groups compenence classified on HDI variable

Group 1	Group 2	Group 3	Group 4
Austria Belgium Denmark Switzerland Finland France Ireland Island Italia Luxembourg United Kingdom Norway Holland Spain Sweden	Bulgaria Romania	Czech Republic Croatia Estonia Latvia Lithuania Malta Poland Slovakia Hungary	Cyprus Germany Greece Portugal Slovenia
$\overline{HDI} : 0.947$	$\overline{HDI} : 0.811$	$\overline{HDI} : 0.861$	$\overline{HDI} : 0.914$

The first group, the largest one, gathers 15 countries which record the highest values of the human development index: 0.947 (see on average, these countries being also the first ones in the hierarchy made by UNDP). These countries' residents from group 1 have a high level of education, reflected by the literacy rate variable, with a medium value of 98.89%, approximately 71% of those with an age from 25 – 64, graduates of high school at least. The level of the activity rate proposed by The European Council from Lisbon (March 2000) as an aim for the year 2010, that is 70% for the age group 15 – 64 and 60 % for women, was surpassed by the countries from this group in 2005 with 0.05%, respectively with 3.28%. This can be explained by the fact that the inhabitants have a high level of education which easily permitted them to get a job, the persons with a superior level of qualification having a 42.44 % and those with elementary occupations having 8.57%. The medium value of GDP/ person, in this group, is in average of 34, 216 USD (PPP), the value close to that of Norway, considered the most developed country. The highest value is recorded in Luxembourg. The life expectancy is, in average, of 79.1 years, the highest value being recorded in Iceland (80.7 years) and the lowest in Denmark (77.2 years). This variable reflects a well organized health system and a big percentage from GDP given to the health system.

Norway, the first place occupant in the global hierarchy, succeeded to become the most developed country, after that in 1970 it ranked among the last in Europe. The explanation of this ascension is given by the fact that the Norway's economy has a favorable growth period, with low rates of unemployment and inflation. All these reflect the globalization effects, from which Norway fully beneficiated (more than other members of The Organization for Economic Cooperation and Development - OECD): it supplies electric power and other goods at high prices and imports other goods at low prices. The liberalization of the

economy, the tradition in commerce, the embracement and a fast spread of new technologies and a stable macroeconomic politic are some characteristics that led to this success. At the same time, Norway is one of the most productive countries from OECD.

The second group is made up of only Bulgaria and Romania, these two countries having the lowest values of HDI, 0.816 and respectively 0.805. Romania is situated on the last place of the 31 countries took into account. This could be explained by the evolution of the GDP that increased only from 2000 with a 1.8% increase in 2000. In 2001 Romania had the highest rate of inflation in comparison with the other former communist countries. It must be taken into account the fact that the used data are from 2005, before the adhesion to the European Union. Probably that the present situation has changed, but another studies could not be done due to the lack of information and because the calendar year is not over. However, Bulgaria surpassed us, being a little more developed than we are.

Between group 1 and group 2, being at extremes, situate groups 3 and 4. In the third group there are 9 countries with a level of development closer to the countries from group 2 than to the countries from group 1, having a HDI average value of 0.861. Most of the countries from this group were former communist one, but apparently they have succeeded to reach to a medium level of development. From certain points of view, these countries are not doing so well: it has been recorded a lower rate of activity (the unemployment rate being higher – approximately 5%), a higher percentage of inactive persons (especially in countries with a lower level of education), farmers are more numerous than in the first group countries (less persons with a high level of qualification). The highest inactivity rate is recorded in Lithuania, both in the case of youngsters and women (approximately 70%).

Group 4 has only 5 countries with a pretty high level of development, close to the values recorded in the countries from group 1 (a 0.914 average). Cyprus and Portugal, although having a high level of development (0.904), have the lowest level of education, only 46% of its inhabitants graduate high school. In Portugal there is also the lowest value of the literacy rate variable (only 92%). The average GDP per capita in this group is 22776 USD (PPP), a significantly smaller value than the one recorded in the first group.

### **The classification of countries based on HPI**

A factor not taken into account by HDI is the price paid for welfare by the rich countries. For example, Norwegians consume in average 3.5 times more than their share of world's resources (value quantified by the Footprint dimension, a HPI component). Since global resources are limited, it is not possible as all the countries of the world to "buy" welfare at the same price to which developed western countries got used to. But a high level of resource consumption doesn't lead to a high level of welfare, and what is the most important, a high level of welfare can be acquired with smaller resource consumption.

HPI supplies precise data referring to the fact that in the economic development model there is a certain threshold. More precisely, once that GDP/ person reached a certain level, the economic growth has negative effects, causing more damage than good and reduces the welfare level for the next generations with a very small or zero effect for the current generation. This hypothesis was initially given in the "Index of Sustainable Economic Welfare". This aspect is very well illustrated by

three Mediterranean countries: Greece, Portugal and Spain. All three had as a government form the military dictatorship until 1970 and adhered to European Union in the 80's. They can be considered as a typical example of a successful development.

While inhabitants' welfare had to gain, the negative impact upon the natural environment is more accentuated and continues to accentuate. HPI gives an alternative, namely the need for development to stay in the limit of moderate resource consumption and to take also in consideration the personal satisfaction of the inhabitants.

The 31 European countries were grouped according to the happiness index in 4 classes. These classes were validated with the help of the ANOVA analysis.

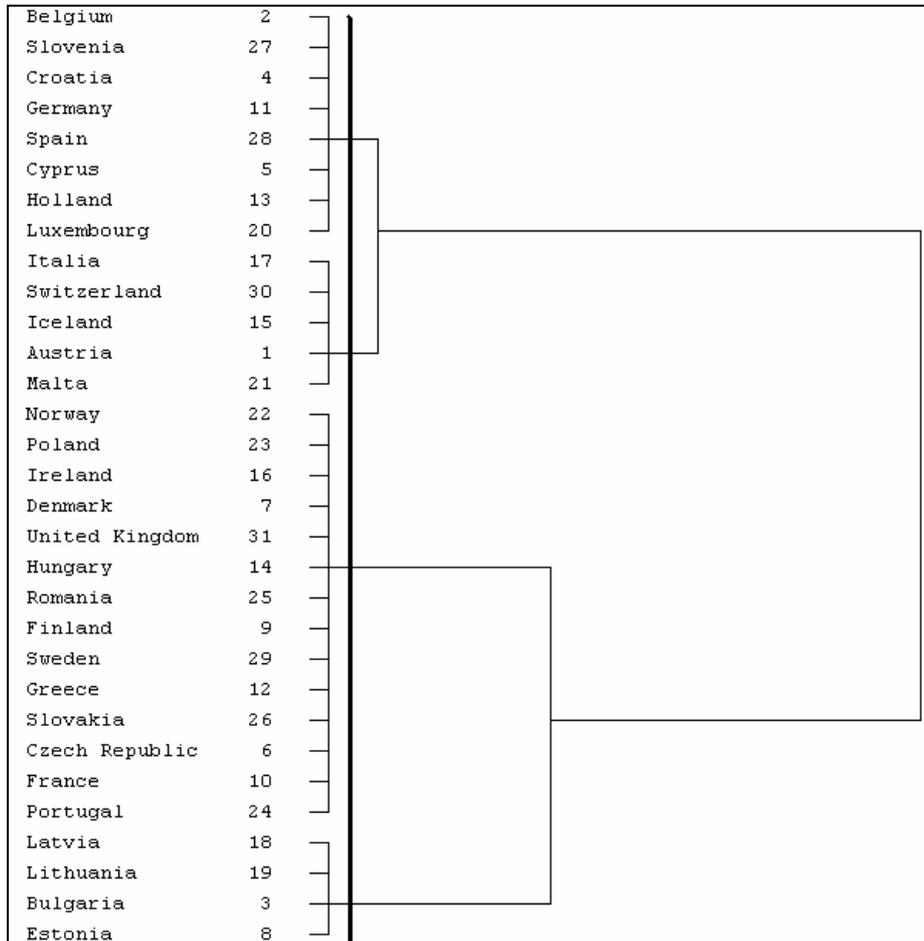
Table 4. The classification validation – ANOVA for HPI

	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Between Groups	1274.99	3	424.99	97.332	0.000
Within Groups	117.89	27	4.366		
Total	1392.89	30			

Table 5. The groups compenence classified on HPI variable

Group 1	Group 2	Group 3	Group 4
Austria Switzerland Iceland Italia Malta	Belgium Cyprus Croatia Germany Luxembourg Holland Slovenia Spain	Bulgaria Estonia Latvia Lithuania	Czech Republic Denmark Finland France Greece Ireland United Kingdom Norway Poland Portugal Romania Slovakia Sweden Hungary
$\overline{HPI} : 49.398$	$\overline{HPI} : 44.533$	$\overline{HPI} : 27.707$	$\overline{HPI} : 37.844$

Figure 2. HPI Dendrogram



The first class is made of the countries with the highest level of happiness (the HPI average in this group is 49.398). Malta takes the leading position in Europe regarding the level of happiness (HPI = 53.3), but it ranks only on the 40th place in the world. Although it is situated in the green zone (see Table 6), of two of the component dimensions of the happiness index, namely life satisfaction with a 7.5 value and with a life expectancy at birth of 78.4 years. Regarding the impact upon the natural environment it is seen that Malta is in the yellow zone (see Table 6), having a Footprint of 3.5, which denotes an irresponsible behavior towards the present consumption and also an inefficient allocation of resources. Although the other four countries from this group record values of life satisfaction and life expectancy components which takes them on the green color, the Footprint variable lowers them in the classification. To sustain these states' population it would be needed more than four planets like Earth at the present resource consumption.

The 2nd group includes 8 countries with a medium level of happiness of approximately 44. It is noticed that the individuals living in these countries are satisfied by their private life, having a life expectancy at birth of more than 75 years, but denotes an irresponsible behavior regarding their impact upon the natural environment (the Footprint dimension is on the red zone).

Among the third class we find the most unhappy European inhabitants, respectively Bulgarians, Estonians, Lithuanians and Latvians. They are extremely unsatisfied by their life, with an average life expectancy of 72 years, but with a red Footprint.

In the last group, which records a medium level of happiness of 37.844, is also situated Norway, among other 13 states. According to the level of development, Norway takes the first place, but in the **nef** classification Norway is on the 115th position. A possible cause of this could be the very high value of the ecological Footprint dimension of the HPI, of 6.2, meaning a major negative impact upon the natural environment. According to the Kyoto Agreement, Norway wants to develop a series of policies and instruments to reduce pollution. In October 2006, a commission proposed a strategy for reducing GHG (Greenhouse gas) emissions with 50 to 80% until 2050. Romania is a component of this class situating on the 120 position in the **nef** classification. The Romania's proximity to Norway is explained the 2.7 value of the ecological Footprint variable, compensating in the HPI calculus the lower value for life satisfaction (5.2), comparing to that of Norway of 7.4. What happens in the case of Poland regarding the Footprint variable? Its value dropped from 4.88 in 1989 to 3.34 in 2002, despite the fact that in that period an economic growth also took place. This made possible by introducing new technologies.

Table 6. Colour key for HPI components

	Blood Red	Red	Yellow	Green
Life satisfaction		< 5,5- dissatisfied	5,5-6,7- medium	>6,7- satisfied
Life expectancy		< 60 – poor	60-75- average	>75- good
Footprint	> 5 planets	> 2 planets	1- 2 planets	< 1 planet

Source: HPI Report, pp.15

In time, different hypothesis were made regarding the elements and factors which influence happiness. Most of the studies have shown the happiness dependence to the income growth, determining also the happiness growth up to a certain point, when income increase doesn't determine the modification of the happiness level. But happiness is not influenced just by its own income, but also of its reference group, individuals being more happy as their income is bigger than the reference group (Ferrer-i-Carbonella, 2005).

This study tries to find other factors which determine happiness. To quantify happiness, life satisfaction was considered as a dependent variable, having an equivalent relation with happiness. Earlier was mentioned that life satisfaction is determined in quantitative researches as an answer to the question: "How happy are you momentarily compared with your life so far?". Life satisfaction is used by HDI in a 77% proportion and as more factors are being introduced in this model, the proportion increases to 83%.

The most important factor which influences happiness is the human development level. This indicator subsumes life expectation at birth, literacy and enrollment rate and GDP per capita. There is a strong correlation between life satisfaction and HDI (0.879), this being possible because the dimensions of the development level contribute to the increase of personal satisfaction and individual welfare. As bigger the development level of a country is, as easier is for the resident population to have access to a qualitative educational system, which assures a work place adequate to his professional training and therefore a bigger income. All these elements contribute to the increase of the happiness level of an individual. The model has the following formula:

$$\text{Life satisfaction} = \beta_0 + \beta_1 \text{HDI} + \varepsilon \quad (1)$$

Table 7. Regression 1

Life Satisfaction	Coef.	Std. Err.	T	P> t	[95% Conf. Interval]	
HDI	20.836	2.095	9.95	0.000	16.552	25.119
intercept	-12.268	1.905	-6.44	0.000	-16.163	-8.373
N=31 R-squared=0.773 Adj R-squared=0.766 Prob > F = 0.000						

By introducing another factor in the model it was expected to explain the endogenous variable, life satisfaction, in a greater deal:

$$\text{Life satisfaction} = \beta_0 + \beta_1 \text{HDI} + \beta_2 \text{GINI} + \varepsilon \quad (2)$$

In the Table 8 shows that by introducing another exogenous variable, happiness can be explain in a proportion of 80% by the level of the human development and by the unequal distribution of income.

Table 8. Regression 2

Life Satisfaction	Coef.	Std. Err.	T	P> t	[95% Conf. Interval]	
HDI	20.466	1.961	10.43	0.000	16.448	24.484
GINI	-0.052	0.023	-2.30	0.029	-0.099	-0.006
intercept	-10.294	1.974	-5.21	0.000	-14.338	-6.250
N=31 R-squared=0.809 Adj R-squared=0.796 Prob > F = 0.000						

As long as there is a bigger discrepancy between the rich and the poor, the less happy people are, a hypothesis shown by equation (2) through the GINI index coefficient (-0.052). To this conclusion a Life Satisfaction reached the study of Alesina et al. (2004). Regarding the level of development it was noticed that its influence on the happiness by introducing another factor hadn't significantly modify.

For a better explanation of happiness a new exogenous variable was introduced in the above model looking like this:

$$\text{Life satisfaction} = \beta_0 + \beta_1 \text{HDI} + \beta_2 \text{GINI} + \text{MARRIAGE} + \varepsilon \quad (5)$$

*MARRIAGE* - number of marriages to 1000 persons

By introducing the number of marriages to a thousand persons in the model, the happiness explained by HDI, GINI and the number of marriages increased with 2% apart from the happiness presented in the previous model.

Table 9. Regression 3

Life Satisfaction	Coef.	Std. Err.	T	P> t	[95% Conf. Interval]
HDI	21.220	1.819	11.66	0.000	17.487 24.953
GINI	-0.052	0.021	-2.48	0.020	0.095 -0.009
MARRIAGE	0.242	0.095	2.54	0.017	0.046 0.437
intercept	-12.224	1.960	-6.24	0.000	-16.246 -8.203
N=31 R-squared=0.846 Adj R-squared=0.829 Prob > F = 0.000					

Happiness is also influenced by the marital status of the persons, meaning that married persons are happier. Divorces have a negative influence upon life satisfaction, although this influence has little significance in the present study. Although marriage makes people happier, a personal satisfaction increase doesn't determine the individuals to commit themselves in a marriage.

Recent psychology studies show that persons who give great importance to material aspects like money, fame, physical appearance and their possessions are less content by their life than those who consider these things of less importance. The psychologist Tim Kasser states that the need of material possessions represents an extrinsic motivation (a motivation not valuable in itself; come from the need of acceptance by the others). Intrinsic motivations are associated with the feelings of autonomy and happiness, and the extrinsic ones are associated with dissatisfaction and anxiety.

Life satisfaction is positively bound with variables like loyalty, creativity, need for adventure and negatively associated with a stable government, welfare. In other words, those who consider loyalty and creativity as being the most important characteristics are happier than others.

#### 4. Conclusions

The anthropologist Jared Diamond explains in his book "Collapse" that over the centuries, civilizations disappeared because they haven't realized when their way of life outrun the limits imposed by the natural environment. Common sense tells us that is impossible that every country to carry on its activity like the western countries, when this way of life means a resource consumption which outruns the physical limits of the planet. HPI shows that are another ways to reach the wanted level of development; similar levels of welfare can be reached with a lower ecological cost.

More and more, in recent researches, it is said that life is less idyllically in the contemporaneous western societies that what is seemed to indicate GDB, HDI or other indicator of progress. The rate of those who suffer from depression increased in all groups of age, being an ascendant trend in drug consumption, suicides and crimes made by young people in these developed countries.

It is worth mentioning that HPI doesn't try to find the country in which we wish to live, from the all points of view. It is highly possible to be persons extremely satisfied by their life in every country of the world; as well as persons completely dissatisfied by their life. A good HPI score doesn't indicate that in the respective country there are no problems, that the current level of welfare is a high one or the resource consumption is equitable.

It has to be mentioned the fact that very poor countries benefit locally and nationally, in a certain way, from the economic growth. In the latest researches, **nef** suggests that a development based on a global increase is inefficient from the poverty reduction perspective. If welfare and not richness is the purpose of development, efforts must be made to ensure that the respective country doesn't have a development with a negative impact upon certain aspects of life like its social aspect, the community.

For this study made upon a sample of 31 European states, a classification according to two indexes, human development and happiness, leads to groups of different components. This is possible due to the calculus methodology of those two indicators. There are differences between classes when making classifications on the HDI and HPI variables, however there are some resemblances. The happiest countries (Austria, Switzerland, Iceland, Italy) records also the highest level of human development, Malta being the only exception. Anyway, Malta has the best score for happiness from Europe, from the development point of view it is less developed, situating in the third group with an average HDI score of 0.861. The rest of the countries which are considered as highly developed (Belgium, Denmark, Finland, France, Ireland, Luxembourg, United Kingdom, Norway, Holland, Spain, Sweden) have a medium level of happiness ( $\overline{HPI} = 40.99$ ). About the less developed countries we can say that Bulgaria has a very unhappy population, the citizens of Romania are a little bit happier than Bulgarians. Estonia, Latvia and Lithuania fits in the same group with Bulgaria from the Happy Planet Index perspective.

It could be seen that the level of happiness, measured through the life satisfaction variable, was influenced in a great proportion (0.809) by HDI and also by the GINI inequality coefficient in a negative way and the number of marriages. These independent variables explain the endogen variable, life satisfaction, in a 84.6% percentage. Thus, it is said that people who have made a family in the countries with a high level of human development, where there is a big discrepancy between the poor and the rich, are happier. Other factors on which human happiness depends are the political stability ( $R^2 = 0.27$ ) and the Voice and Accountability Index ( $R^2 = 0.67$ ). According to World Bank, the Voice and Accountability Index measures the liberty of the citizens of a country to elect government by vote, freedom of speech, liberty to associate and press liberty.

The obtained results on the factors which influence happiness are in concordance with the results obtained by other studies mentioned in the first part of the article.

## References

- Alesina et al. (2004) Inequality and happiness: are Europeans and Americans different?, *Journal of Public Economics*, 88 (9-10), pp.2009- 2042
- Binswanger M. (2006) Why does income growth fail to make us happier? Searching for the treadmills behind the paradox of happiness, *The Journal of Socio- Economics*, 35 (2), pp.366- 381
- Buiga A. (2001) *Metodologie de sondaj și analiza datelor în studiile de piață*, Ed. Presa Universitară Clujeană, Cluj Napoca
- Diamond J. (2005) *Collapse: How Societies Choose to Fail or Succeed*
- Diener E. (2000) Subjective well-being: The science of happiness, and a proposal for a national index; *American Psychologist*, 55 (1), pp.34-43
- Everitt B.S. et al. (2001) *Cluster analysis*, Oxford University Press US
- Ferrer-i-Carbonell A. (2005) Income and well- being: an empirical analysis of the comparison income effect, *Journal of Public Economics*, 89 (5-6), pp.997-1019
- Graham C. et al. (2004) Does happiness pay? An exploration based on panel data from Russia, *Journal of Economic Behavior & Organization*, 55 (3), pp.319-342
- Johnston J. & DiNardo J., *Econometric Methods*, McGraw- Hill, Fourth Edition
- Kasser T. (2002) *The high price of materialism*, Cambridge, MA: MIT Press
- Keely L.C. (2005) Why isn't growth making us happier? Utility on the hedonic treadmill, *Journal of Economic Behavior & Organization*, 57 (3), pp. 333- 355
- Morse S. (2004) Putting the pieces back together again: an illustration of the problem of interpreting development indicators using an African case study, *Applied Geography*, 24 (1), pp. 1-22
- Pecican E. (1994) *Econometrie*, Ed. ALL, Bucharest
- Sagar A.D., Najam A. (1997) The human development index: a critical review, *Ecological Economics*, 25 (3), pp.249- 264
- <http://epp.eurostat.ec.europa.eu>
- [www.neweconomics.org](http://www.neweconomics.org) nef 2006, The (Un) Happy Planet Index
- [www.oecd.org](http://www.oecd.org) Report OECD 2002
- [www.oecd.org](http://www.oecd.org) Report OECD 2007
- [www.undp.org](http://www.undp.org) UNDP 2006, Human Development Report
- [www.undp.org](http://www.undp.org) UNDP 1990, pp.10
- [www.wikipedia.org](http://www.wikipedia.org)
- [www.worldbank.org](http://www.worldbank.org)

## QUALITÄTSMANAGEMENT IM INTERKULTURELLEN KONTEXT

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**ABSTRACT.** The article shows the impact of intercultural differences concerning the understanding of concepts of quality. Starting with the development and definition of the term quality the focus will be based on the customer related quality criteria. According to this approach aspects of product quality like design, function, image, brand, service, usability, profitability and reliability of products on the one hand as well as marketing strategies on the other hand play an important role within the intercultural context. Quality, highlighted under the topic of intercultural management, is not so clearly defined as management will try to convince us it is. The term includes values and attitudes, constructed and defined by customers of a cultural background, shared in common, so it has to fulfill the needs of this specific cultural group and therefore must be adapted. The article closes with some suggestions concerning the requirements on expatriate leadership.

**JEL Classification:** M21

**Keywords:** quality management

### 1. Entwicklung des Qualitätsbegriffes

Obwohl ein jüngerer Terminus, der vor wenigen Jahrzehnten entstand, ist der Begriff Qualitätsmanagement sowohl als Prozess der Herstellung wie auch als Gütekriterium für ein Produkt den Herstellern als Einstellung bewusst, denn „Qualität beginnt im Kopf“ (Schoper, 2000). Bereits Lehrlinge, Gesellen und Handwerksmeister bemühten sich um die Umsetzung damaliger Qualitätsstandards. Allerdings zeigt sich schon hier, dass diese kulturellen Standards unterworfen sind. Fast drei Jahrzehnte nach Deming besteht noch immer Definitionsbedarf des Begriffes nicht zuletzt durch die Tatsache, dass Qualitätsmanagement sich auf etliche Bereiche eines Unternehmens erstreckt, wie Teamarbeit, Führung und Motivation, operationale Geschäftsprozesse, Unternehmenskultur, Produktdesign und –qualität.

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Henry Ford gilt als Pionier der „Beherrschung“ von Qualität. 1907 führte er das für seine Zeit neue System der Fließbandkontrolle (Ionescu1997,a) ein. Diese stellte zwar eine gründliche Kontrolle aller Einzelbestandteile sicher, jedoch bedingte der monotone Arbeitsablauf, dass Fließbandarbeiter fehlerhafte Produkte nicht aussortierten. Um 1930 wurde erstmals auf Grund der Studien von Walter Stewart (Ionescu1997,b) die statistische Kontrolle bei „Bell Telephone Laboratories“ eingeführt. Im frühen zwanzigsten Jahrhundert etablierte sich mit Frederick W. Taylor eine neue Qualitätsphilosophie, die Qualität in Planung und Ausführung differenziert. Während Planung und Überwachung die Aufgaben der Manager darstellen, haben die an der Produktion beteiligten Arbeiter die Ausführung inne. Die Fertigung wird in diesem Zuge in einzelne Arbeitsschritte unterteilt und die Kontrolle der Produktqualität kommt Inspektoren zu. So ist es einerseits möglich, Produkte mit guter Qualität an die Kunden auszuliefern, andererseits besteht jedoch ein Nachteil darin, dass der Kunde selbst die Kosten zu tragen hat, die durch schlechte Qualität verursacht werden. Obwohl das System der Inspektion am Anfang des zwanzigsten Jahrhunderts dominierte, konnte es die Herstellung fehlerhafter Produkte nicht verhindern, sondern erkannte Fehler nur zu einem späteren Zeitpunkt und ermöglichte so immerhin eine Verbesserung. In der Folge kam man zu der Erkenntnis, dass Inspektion alleine keine Garantie für die Qualität des Produkts darstellt und dass die Qualitätskontrolle bereits in der Entwicklungsphase durchgeführt werden muss, weil schlechtes Material, schlechte Maschinen oder Entwicklungsfehler vor Produktionsbeginn verhindert werden müssen.

In den fünfziger Jahren produzierte Japan hauptsächlich für Europa und die Vereinigten Staaten Konsumgüter in großen Mengen. Diese hohe Anzahl ging jedoch auf Kosten der Qualität und des Images der japanischen Unternehmen. Die Japaner übernahmen in der Folge die modernsten Methoden des Qualitätsmanagements aus den USA und passten diese ihren Bedürfnisse an. Die Amerikaner vermittelten den Japanern darüber hinaus auch statistische Qualitätstechniken (vor allem durch die amerikanischen Wirtschaftswissenschaftler William Edwards Deming und Juran). Der Qualitätsgedanke wurde so Bestandteil des japanischen Managements, da die Amerikaner sich auf ein Qualitätsmanagement konzentrierten, das die Produktqualität sicherte. Es entwickelte sich eine Kultur der permanenten Verbesserung, „Kaizen“, auf dem auch das „Total Quality Management (TQM)“ beruht (Regius, 2006 a).

Nach dem zweiten Weltkrieg wurde durch Feigenbaums Studien klar, dass Kontrolle allein nicht ausreicht, um die Qualität zu sichern, sondern alle Aktivitäten miteinbezogen werden müssen, die zum Produkterfolg beitragen, wie zum Beispiel Marketing und Forschung; es wurde die totale Kontrolle eingeführt, 1955 erschien der Begriff TQC - Total Quality Control. Im Jahr 1964 führte das US-Verteidigungsministerium das Null-Fehler-Programm ein, das die Perfektion zum Ziel hatte, und 20 Jahre später auf die Wirtschaft übertragen wurde, um die sinkende Kundenzufriedenheit mit westlichen Konsumgütern zu verhindern.

Einen weiteren wichtigen Schritt in der Entwicklung der Qualität stellt das 1979 erschienene Buch „Quality is free“ von Philip Bayard Crosby dar, in welchem er die vier Grundsätze der Qualität beschreibt: 1. Qualität wird als Grad der Übereinstimmung mit Anforderungen definiert; 2. Das Grundprinzip der Qualitätsplanung ist Vorbeugung; 3. Das Null-Fehler-Prinzip muss zum Standard werden; 4. Qualitätskosten sind die Kosten bei Nichterfüllung der Anforderungen. Das Kriterium „Qualität ist Erfüllung von Anforderungen“ definiert erstmals den Qualitätsbegriff neu, da der Kunde in den Vordergrund gerückt wird. So wird die Qualität

immer stärker mit der Philosophie eines Unternehmens in Verbindung gebracht, in jedem Unternehmen muss sich die Tätigkeit nach dem Qualitätsprinzip ausrichten.

Mit der Zeit wird eine Entwicklung der Ansätze in der Qualitätsplanung spürbar, es werden alle Mitarbeiter in die Verantwortung genommen. Die Idee, dass jeder Mitarbeiter gute Qualität in die Organisation einbringt, wird selbstverständlich. Einzelne Abteilungen können so ihr eigenes Qualitätsverständnis entwickeln, indem sie eine der folgenden drei Vorgehensweisen anwenden:

1. Konzentration auf die Funktion: Funktionen, die bei der Unterstützung der Aufgaben der Organisation behilflich sind;
2. Konzentration auf den Prozess: Arbeitsschritte, Prozesse und Vorschriften, die beschreiben sollen, wie die Funktionen erfüllt werden.
3. Konzentration auf die Ideologie: Aufstellen von Werten, die die Mission und Arbeit der Organisation beeinflussen sollen (Regius, 2006 b).

Eine hohe Qualität wird nur erreicht, wenn der Prozess als Gesamtheit betrachtet wird und nicht nur einzelne Ereignisse einer Kontrolle unterzogen werden. Das höchste Ziel des Total Quality Management (TQM) ist die **Kundenzufriedenheit**, nach der sich auch alle weiteren Anforderungen richten. Sobald das Total Quality Management erfolgreich in einem Unternehmen eingeführt wird, wird ein höherer Gewinn erzielt, die Mitarbeiter werden stärker motiviert und die Kundenzufriedenheit steigt. Wir können behaupten, dass im Laufe der Zeit Qualität und Qualitätskontrolle verschiedene Bedeutungen hatten und einer positiven Entwicklung unterlagen. Heutzutage ist der Qualitätsgedanke in allen Bereichen eines Unternehmens anwesend durch Maßnahmen in der Qualitätsplanung, Maßnahmen zur Vermeidung von Fehlern und Qualitätskontrolle. Inzwischen hat sich ein so genanntes Qualitätsmanagement entwickelt, allerdings sind diese Entwicklungen und deren Umsetzung kulturspezifisch geprägt. Obwohl „flache Hierarchien, strategische Geschäftseinheiten, MBO, Matrixorganisation, Assessment Center, TQM und Pay for Performance (sind) nicht nur in der westlichen Welt Gegenstand fast jeden Bestsellers über Management“ (Trompenaars, 1993 a), sind, unterliegen diese Konzepte kulturellen Einflüssen. Trompenaars nennt das Beispiel eines Pay-for-Performance-Systems als Qualitätsmaßnahme, das eine amerikanische Firma weltweit in den Niederlassungen einführen wollte. In individualistischen Kulturen kein Problem, stellt diese Herangehensweise in Spanien – einer kollektiv geprägten Kultur – ein Problem dar. Da Leistung hier von einem Team erbracht wird, könne es nicht angehen, dass ein Mitglied mehr verdiene als der Vorgesetzte, der dann in seiner Position unterminiert würde. Verkäufer, die durch mehr Leistung mehr verdienen, würden als illoyal angesehen gegenüber Team und Vorgesetztem (Trompenaars, 1993 b) Das Beispiel zeigt deutlich, dass es eine ideale Art des Managens und der Qualitätssteigerung nicht gibt, wie Frederick Taylor, Peter Drucker oder Tom Peters es gerne erscheinen lassen.

## **2. „Die Qualität liegt im Auge des Betrachters“: der anwenderbezogene Ansatz**

Verfolgt man den anwenderbezogenen Ansatz, so ergeben sich unterschiedliche Betrachtungsweisen von Seiten des Kunden. Als Anforderung, die dieser an ein Produkt stellt land Crosby, ist Qualität immer eine relative Größe ohne einheitliche Definition. Ausgehend von Produktqualität, welche vorliegender Artikel in Zusammenhang mit Kundenzufriedenheit im interkulturellen Kontext beleuchtet, liegt deshalb keine einheitliche Definition vor, weil der Begriff „Qualität“ selbst

Bestimmungsmerkmale transportiert, die zum einen als „multi-dimensionales Konstrukt“ beschrieben werden können, zum anderen im interkulturellen Kontext von Kundenseite her unterschiedlich definiert werden. „The word ‚quality‘ is used to mean different things in different studies such as internal process quality, one or several dimensions of product quality, customer satisfaction and operational performance“ (Sousa & Voss, 2002). Sieht man die Anforderung an ein Produkt oder an eine Dienstleistung in der *Kundenzufriedenheit*, so ergeben sich verschiedene Ausprägungen. „Im nationalen Kontext ist die Erfüllung der Qualitätsforderungen bereits schwierig. Es gilt eine Übereinstimmung herzustellen in den Erwartungen der beiden beteiligten Partner, dem Kunden und dem Lieferanten. Im internationalen Kontext ist diese subjektive Bewertung von Qualität weitaus komplizierter, weil teilweise konträre, kulturell geprägte Auffassungen von Qualität aufeinander treffen“ (Schoper, 2004 a). Demzufolge existieren kaum Untersuchungen zum interkulturellen Qualitätsverständnis eines Produktes; hier sind Anleihen aus dem internationalen Marketing bzw. der Marktforschung vonnöten. Interkulturelles Qualitätsmanagement in Bezug auf Produktqualität und Kundenzufriedenheit liegen nicht vor und finden sich derzeit nur in der Forschungsliteratur über internationales Marketing. Doch die Marketingkonzepte innerhalb der Managementtheorie sind hier in erster Linie auf eine statische Umgebung bezogen und Qualität wird oft nur mit einem bestimmten Begriff beschrieben. „In addition, the deficiencies of the existing QM literature in defining product quality have been identified as being responsible for conflicting results reported in the literature linking quality to outcomes such as market share, cost and profits (Reeves, 2002). Messmethoden für spezifische, d.h. auch interkulturelle Kontexte für eine theoretische Fundierung des Konzepts Qualitätsmanagement stehen noch aus und wären dringend zu entwickeln, vor allem, wenn man die „market route“ des Qualitätsprozesses als Ausgangspunkt nimmt, wo die Verbesserung der Produktqualität an erster Stelle steht. „Regarding QM’s immediate output, product quality, we saw that existing research still had to overcome some definitional deficiencies, namely, it should begin to carefully choose and clearly state the definition of quality used and to treat quality as a multi-dimensional construct.“ (Sousa & Voss, 2002 b). Innerhalb dieser Definitionsfestlegung sollte das Ziel auch sein, kontextuelle Variablen zu berücksichtigen – und kontextuell meint hier auch: kulturell. Daran schließt sich die wissenschaftliche Problematik, wie eine allgemeine Definition von QM und ihre Umsetzungspraxis spezifischen (fremdkulturellen) Situationen einer Organisation gerecht werden kann, damit letztlich die Produktqualität sichergestellt wird. Eine Rolle spielt sicherlich, wie weit eine Organisationskultur in das Zielland integriert ist und welche internationale Ausrichtung ein Unternehmen verfolgt (ethnozentrisch, geozentrisch, polyzentrisch).

Qualität kann von verschiedenen Seiten her definiert werden. So ist Qualität die „Gesamtheit von Eigenschaften und Merkmalen eines Produktes oder einer Tätigkeit, die sich auf deren Eignung zur Erfüllung gegebener Erfordernisse beziehen“ (Schoper, 2004 b). Qualität ist ebenso die „Übereinstimmung mit den Anforderungen“ (Schoper, 2004 c). oder einfach „Gebrauchstauglichkeit“ (Schoper, 2004 d). Dieser Definition zufolge ist Qualität immer relativ, weil jeder Kunde verschiedene Anforderungen an ein bestimmtes Produkt stellt. Das Beispiel eines Schuhs mag dies verdeutlichen: Für einen Kunden bedeutet Qualität, wenn der Schuh lange wie neu aussieht, für den anderen hingegen, wenn er bequem zu tragen ist. Da diese Anforderungen einen subjektiven Ansatz implizieren, sind sie folgerichtig kulturabhängig. In Bezug auf interkulturelle Forschung lässt sich auf die Frage „Was

ist Qualität“ vor allem deshalb der anwenderbezogene Ansatz verfolgen, weil hier von Kundenseite Verhaltensweisen, Einstellungen und Werte zum Tragen kommen, die kulturell bestimmt sind. Nicht umsonst setzt sich gerade dieser Ansatz durch – wenn auch um den Preis, dass Qualität nicht genau mess- und fassbar ist, da in einer sich ständig ändernden Welt sowohl Produktionsbedingungen einerseits wie Kundenwünsche andererseits variabel bleiben. Qualität „ist also in erster Linie eine Sache der Einstellung, sowohl bei dem, der die Qualität in Form eines Produktes oder einer Dienstleistung erzeugt, als auch bei jenem, der das Ergebnis als Kunde abnimmt“ (Schoper, 2004 e). Betrachtet man von Produktseite her den Prozess des Qualitätsmanagements, so zeigt sich deutlich, dass die Kundenzufriedenheit hier eine wesentliche Rolle spielt. Reed et. al., die den Zusammenhang von QM und nachhaltigem Wettbewerbsvorteil untersuchen, betonen, dass sich hier alle Autoren einig seien: „We have identified two areas where complete agreement exists among the authors on the purpose of quality. All the authors emphasize that the customer defines quality and, in turn, that quality creates customer satisfaction which leads to an improved competitive position“ (Reed, 2000 a). Auch Deming betont, dass der Kunde das wichtigste Glied in der Produktionskette sei, Feigenbaum meint, Qualität sei das, was der Kunde sagt, dass sie sei und sollte in ein Qualitätsmanagement eingebettet sein; Ishikawa bezeichnet die Kundenorientierung als Kontrolle über den Managementprozess und Juran zeigt auf, dass Kundenzufriedenheit als Resultat von Produktzufriedenheit zu sehen sei. Die „market-route“ oder das „market-based model“ geht davon aus, dass die Umgebung hier auswählt, welches Unternehmen auf dem Markt reüssiert – will man gezielt Aktivitäten in einem fremdkulturellen Umfeld zur Kundenzufriedenheit starten, kann dieser „natürliche“ Selektionsmechanismus nicht ausreichend sein, berücksichtigt man den reduzierten Kostenfaktor (als Kompensation zur teuren Marktforschung), der neben Kundenzufriedenheit aus konsequentem Qualitätsmanagement resultieren soll. „As already pointed out, there is agreement among Crosby, Deming, Feigenbaum, Ishikawa and Juran that the purpose of quality management is to reduce costs and improve customer satisfaction. These ideas fit closely with the market-based view of competitive advantage (...) being able to differentiate in a way that adds value to customers “ (Reed, 2000 b). Dieser wertbezogene Ansatz betont, dass Unterschiede und Differenzierung für den Wettbewerbsvorteil einen entscheidenden Faktor darstellen. Die Autoren empfehlen deshalb Unternehmen, die unter unsicheren fremdkulturellen Marktbedingungen operieren, in das Produktdesign zu investieren, um Einkünfte zu verbessern und Kosten zu senken. Kultur – sowohl Nationalkultur wie Firmenkultur – kann hier eine Hemmschwelle darstellen, sich jedoch auch als Wettbewerbsvorteil herausstellen.

Nach der aktuellen Norm ISO 9000:2005 zum Qualitätsmanagement bedeutet Qualität den „Grad, in dem ein Satz inhärenter Merkmale Anforderungen erfüllt“. „Inhärent“ bezeichnet in diesem Zusammenhang ‚einer Einheit innewohnend‘, insbesondere als ständiges Merkmal. Dieser Definition entsprechend gibt die Qualität an, inwiefern ein Produkt, eine Ware oder eine Dienstleistung den Anforderungen entspricht. Nach ISO 9000 ist somit qualitätsentscheidend, in welchem Maße die **Anforderungen an das Produkt** erfüllt werden; der Preis oder die verwendeten Materialien sind zweitrangig. Um die Anforderungen an das Produkt zu erfüllen, müssen die objektiv messbaren Eigenschaften den subjektiven Erwartungen der Kunden entsprechen. Diese Definition ersetzt den vorherigen Standard zum Qualitätsmanagement, DIN EN ISO 8402:1995-08. Nach diesem Standard bedeutete Qualität „die Gesamtheit von Merkmalen einer Einheit bezüglich ihrer Eignung,

festgelegte und vorausgesetzte Erfordernisse zu erfüllen.“ Einheiten stellen hierbei Produkte, Dienstleistungen, Konzepte, Entwürfe, Software, Arbeitsabläufe, Verfahren und Prozesse dar.

Eine für die Bedürfnisse der Verwaltung umfassende Definition in Anlehnung an Hermann Hill einerseits sowie an die ältere Fassung der Qualitätsnorm ISO 8402 andererseits lautet: “Qualität ist die anhand von vorgegebenen (Qualitätsnormen, Standards), vereinbarten (Vertrag, Leistungsvereinbarung, Zielvereinbarung) oder erwarteten (Kundenbefragungen) Merkmalen (prozess- oder ergebnisorientiert) gemessene Eigenschaft einer Einheit: eines Produktes/einer Dienstleistung, eines Prozesses, oder einer gesamten Organisation oder Organisationseinheit “. Da Organisationen per se eine **Kultur** aufweisen, die sich in einem Verhaltenskodex „So machen wir das hier bei uns!“ niederschlägt und die ihrerseits in eine **Nationalkultur** eingebettet ist, kann unschwer geschlossen werden, dass sich Qualitätsnormen kulturellen Gegebenheiten unterwerfen. So kann etwa die Typologie Geert Hofstedes, eines Pioniers auf dem Gebiet des ebenfalls relativ jungen Forschungsfeldes des interkulturellen Managements, in Bezug auf die Qualität einer Dienstleistung bzw. eines Produktes herangezogen werden. Er unterscheidet die vier Kriterien Machtdistanz (emotionale Distanz zwischen Vorgesetztem und Mitarbeiter), Individualismus/Kollektivismus (individuelle Interessen im Unterschied zu Gruppeninteressen), Maskulinität/Femininität (klare Rollentrennung zwischen Mann und Frau) und Unsicherheitsvermeidung (Grad der emotionalen Bedrohung bei unsicheren Situationen). Auf Grund dieser Typologie, die natürlich eine Generalisierung darstellt, lassen sich Kriterien für ein Qualitätsmanagement/Nicht-Qualitätsmanagement ableiten. Ein Beispiel mag dies verdeutlichen: „Boeing found in its annual study on world aviation safety that countries with both low individualism and substantial power distances had accident rates 2.6 times greater than at the other end of the scale“ (Czinkota & Ronkainen, 2004 a). Dies lässt sich dadurch erklären, dass in kollektiven Kulturen die Verantwortung auf die Gruppe aufgeteilt wird - im Unterschied zu individuellen Kulturen, wo Verantwortung beim einzelnen liegt - und dass eine hohe Machtdistanz gegenüber dem Vorgesetzten herrscht, bei dem die Letztentscheidung liegt. Lange Entscheidungswege einerseits (alle Gruppenmitglieder müssen gehört werden) und Unentschlossenheit in der Vorgangsweise (der Vorgesetzte will sich bei der Gruppe absichern, da er auf deren Gunst angewiesen ist) sind die Folge und wirken sich direkt auf die (mangelnde) Qualität der Flugsicherheit aus.

### 3. Kriterien für Produktqualität

Neben Qualitätskriterien im Dienstleistungsbereich ist in Bezug auf den anwenderorientierten Ansatz der erfolgreiche Verkauf eines **Produktes** von Qualität bestimmt. Ein Unternehmen kann sich nur dann auf dem Markt durchsetzen, wenn Kundenzufriedenheit erreicht wird, aus diesem Grund muss das Produkt eine bestimmte Qualität aufweisen, einen gerechtfertigten Preis haben und einen guten Lieferzeitpunkt erfüllen. Durch den täglichen Gebrauch des gekauften Produktes ist Qualität der einzige der drei Faktoren, der lange nicht vergessen wird, während Preis und Lieferung dem Kunden nicht langfristig bewusst bleiben. “Quality exists, when the price is long forgotten“ meinte Frederick Henry Royce. Allerdings kann dies nicht uneingeschränkt gelten. In den ehemaligen postkommunistischen Ländern zum Beispiel wird Qualität durchaus mit einem hohen Preis assoziiert „Was teuer ist, muss gut sein“ ist im Verkauf die bekannteste Gleichsetzung. Umgekehrt gilt auch: Was

billig ist, ist nichts wert.“ Die Regulierung von Qualität über den Preis ist daher nicht ohne weiteres von der Hand zu weisen.

Auch Ahire/Dreyfus betonen nach Hill, dass die Literatur zu Produktionsstrategien die **Produktqualität** als einen wesentlichen Faktor zur Erlangung eines nachhaltigen Wettbewerbsvorteils einschätzt. Als Resultat eines effizienten Prozessmanagements wird diese bereits 1986 bei Deming hervorgehoben. Die Autoren gehen unter anderem der für unser Vorhaben wichtigen Frage nach, ob (Produkt-)Design-Management eine entscheidende Rolle bei der Wahrnehmung von Produktqualität durch den Kunden spielt (Ahire & Dreyfus, 2000 a). Für den interkulturellen Aspekt ist dies insbesondere bedeutend, da die Eindrücke eines Kunden von einem Firmenprodukt auf dessen laufenden und vergangenen Erfahrungen beruhen, welche wiederum kulturspezifisch geprägt sind, da diese innerhalb einer Kultur nach Hofstede einer „kollektiven Programmierung“ unterliegen. Ahire/Dreyfus benennen diesen Zuschreibungsprozess durch den Kunden „external quality“, welcher gleichzusetzen ist mit Jurans „fitness fo use“ – Dimension von Produktqualität. Ausgehend von 9 Hypothesen, die den Zusammenhang von Prozess- und Design-Management beleuchten, sind in Bezug auf Kundenzufriedenheit vor allem die Thesen 1, 2, 5 und 6 relevant, die hier kurz umrissen werden sollen. These 1 postuliert eine Korrelation von interner und externer Qualität, ausgehend von der Annahme, dass sich Funktionalität und Verlässlichkeit des Produktes auf die Kundenzufriedenheit auswirken (Beschwerden, Garantie..), These 2 zeigt auf, dass sich das Produktdesign ebenso auf die externe Qualität auswirkt. Besseres Produktdesign und schnellere Produkteinführung gewinnen Konsumenten für sich. Ebenso können innovative Firmen besser auf die aktuellen Bedürfnisse und Vorlieben der Kunden eingehen. These 5 meint, prozessorientiertes Qualitätsmanagement habe einen positiven Effekt auf die externe Qualität, wobei als Beispiele Dell und Selectron genannt werden, welche in ihren Produktionsprozess sowohl Kundenwünsche einbauen wie die Ursachen für Reklamationen eliminieren. These 6 bezeichnet den positiven Zusammenhang zwischen Designmanagement und Produktdesign. Vor allem die Geschwindigkeit der Entwicklung von neuen Produkten sei hier ein entscheidender Faktor der Kundenzufriedenheit: „The participation of costumers and the marketig function in the design process ensures that product designs are relevant to costumer needs“ (Ahire & Dreyfus, 2000 b).

Bis auf Hypothese 2 werden in der Untersuchung alle Annahmen bestätigt, wobei die erste These die höchste Korrelation aufweist: „Note that with the exception of the product design performance – external quality link (Hypothesis 2) all of the path coefficients of hypothesized paths in the model are positive and highly significant “ (Ahire & Dreyfus, 2000 c). These 2 jedoch wird – so die Autoren – über den indirekten Weg der internen Qualität, worunter die Entwicklung des Produktdesigns fällt, unterstützt, jedoch insgesamt weit weniger stark. Dieses Ergebnis steht auf den ersten Blick im Widerspruch zu dem Ratschlag von Reed, Firmen mögen unter unsicheren Marktbedingungen in das Produktdesign investieren. Jedoch ist dieser Widerspruch insofern gemildert, da in einem fremdkulturellen Umfeld ein Unternehmen zuerst über das Produkt(design) wahrgenommen wird, auf längere Sicht jedoch das Gesamtunternehmen in der Zielkultur positiv verankert werden muss. Für den interkulturellen Kontext führt dies zur Überlegung, dass die Gesamtperformance eines Unternehmens stärker ins Gewicht fällt als dessen Produktdesigns! Nach der Systemtheorie – ebenfalls als Ansatz für Qualitätsmanagement genutzt – kann gelten: Was nach innen wirkt, wirkt auch nach außen; was im negativen Fall bedeuten würde,

dass eine Firma, in einer Fremdkultur negativ wahrgenommen, dies nicht mit Qualitätsprodukten wettmachen kann. Untersuchungen diesbezüglich erbrächten sicherlich interessante Ergebnisse: „The weak support for the product design performance – external quality direct effect, in conjunction with significant indirect effect of product design performance on external quality through internal quality provides further insights.“. Aufschlussreich wäre in diesem Kontext die Frage, welche Werte der Kunde – um die es letztendlich geht - an einem Unternehmen abgesehen von den Produkten noch (unbewusst?) wahrnimmt.

Anand Nairs Untersuchung der Beziehung zwischen Qualitätsmanagement und Unternehmensleistung schließt sich hier an. Nair untersucht die Forschungsdaten zwischen 1995 und 2004 und erweitert die klassischen Bereiche des Qualitätsmanagements Unternehmensführung, Mitarbeiterführung, Prozessmanagement, Produktmanagement Datenanalyse, Lieferantenmanagement um weitere Dimension wie Produktqualität (beständige Qualität, Verlässlichkeit, Designqualität) und Kundenorientierung (Serviceorientierung) (Nair, 2006). Eine hohe Korrelation weist hierbei die Verbindung von *Unternehmensführung*, *Kundenorientierung* und *Produktqualität* auf. Diese ist entscheidend für die Unternehmensleistung, während zwischen Mitarbeiterführung und Produktqualität sowie Mitarbeiterführung und Kundenorientierung keine positive Korrelation besteht. Produktdesign und Management dagegen stehen in positiver Beziehung zur operationalen Leistung; Produktdesign, Management und Kundenorientierung weisen im Unterschied dazu keine positive Korrelation auf. Der Kundenfokus korreliert dagegen mit finanzieller und operationaler Leistung sowie mit der Produktqualität und der Kundenorientierung. Da die beiden letztgenannten Kriterien mit der Unternehmensführung positiv in Verbindung stehen, ist dies entscheidend für den Unternehmenserfolg. Es verwundert daher nicht, dass vor allem in interkulturellen Kontext dem Thema Führung und Organisation eine übergeordnete Bedeutung zukommt, da diese für die Gesamtperformance – siehe auch Ahire – entscheidend sind.

Für ein Unternehmen ist maßgebend, auf dem Markt eine Qualität anzubieten, die der Betrieb konkurrenzfähig herstellen kann (Produktionsqualität) und die vom Kunden nachgefragt wird (Produktqualität). **Produktqualität** wird definiert als „das Erfüllen der Anforderungen an das zu entwickelnde und zu produzierende Produkt“ und unterliegt Kriterien wie

1. Design
2. Funktionalität
3. Image des Herstellers und der Marke
4. Service
5. Vielseitige Anwendbarkeit
6. Wirtschaftlichkeit
7. Zuverlässigkeit

Gerade jedoch im interkulturellen Kontext zeigt sich, dass sich hier (ausgehend von Garvin und seinen acht Kriterien von Produktqualität: Funktionalität, Eigenschaften, Verlässlichkeit, Anpassung, Haltbarkeit, Servisierbarkeit, Ästhetik und wahrgenommene Qualität durch den Kunden) länderspezifische Unterschiede feststellen lassen, wobei die kulturbedingte Wahrnehmung des Kunden für den Verkaufserfolg entscheidend ist, so eine Hypothese. Diese Kriterien sind weltweit

ähnlich, doch die Prioritäten dieser Kriterien sind national unterschiedlich definiert. In Deutschland versteht man unter Qualität Zuverlässigkeit, Funktionalität und gutes Design; in Italien und Frankreich wird Qualität in erster Linie mit neuem Design, Stil und ästhetischer Formgebung verbunden, in England überzeugt man mit handgefertigten Produkten. Die USA bevorzugen Markenartikel mit gutem Image und einer großen Anzahl von Funktionen. Ein gutes Beispiel für die Herangehensweise und Vorstellung dessen, was man unter Qualität zu verstehen habe, bieten amerikanische und deutsche Hersteller von technischen Produkten. Während die Deutschen ein Produkt erst dann auf den Markt bringen wollen, wenn es technisch perfekt ausgefeilt ist, bevorzugen die Amerikaner Tempo und innovatives Design, da Mängel und Fehleranfälligkeit durch gutes Service wettgemacht werden können – was zählt, ist die Aktualität, nicht so sehr die Zuverlässigkeit. Der amerikanische Kunde ist auf diese Tatsache eingestellt, nicht jedoch der deutsche! In Japan wird Qualität wiederum mit hoher Zuverlässigkeit, Aktualität und einem Maximum an Funktionen gleichgesetzt. Der Umstand, dass Deutsche und Japaner ein ähnliches Qualitätsverständnis teilen, mag die Erklärung dafür sein, dass japanische Autos in Deutschland einen großen Markterfolg erzielen konnten und deutsche Fahrzeuge in Japan einen vergleichsweise hohen Marktanteil aufweisen. „Während in Japan und Deutschland hohe technische Maßstäbe (...) gelten, stoßen diese hohen Anforderungen in den USA auf Unverständnis (...) Denn dort hat die Wirtschaftlichkeit und Produktivität eines Unternehmens Priorität“ (Schoper, 2004 h). In Polen, Ungarn und Slowenien wird eine „neue“ Gruppenzugehörigkeit konstatiert, die sich über Statussymbole und Prestigeobjekte definiert: „Damit verbunden war auch eine auffällige Leistungsorientierung in den mittleren Managementschichten und ein klares Karrierebewusstsein (...).“ (Meierewert & Horváth & Topcu, 2002). Demzufolge zeigt sich im Käuferverhalten, dass Qualität damit zu tun hat, „sich etwas leisten zu können.“ Hier kommt wiederum der Preis als Qualitätskriterium in Betracht. Eine an den Fachhochschulstudiengängen Burgenland durchgeführten Umfrage unter Studenten aus Mittel- und Südosteuropa ergab, dass Qualität in Polen, Kroatien, Ungarn und Tschechien in erster Linie über den Preis definiert wird. In Ungarn folgen die Marke und die Zuverlässigkeit, in Kroatien ebenfalls die Marke und das Design (Nähe zu Italien), in Tschechien Zuverlässigkeit (traditionell enge Wirtschaftsbeziehungen mit Deutschland) und das Service. Dies lässt den Schluss zu, dass Länder, die traditionell eng zusammenarbeiten, sich auch im Qualitätsverständnis annähern. Der niederländische Forscher und Managementberater Fons Trompenaars geht noch einen Schritt weiter und sieht die *Synergien* für interkulturelle Qualität. So können nach ihm zum Beispiel deutsche Ingenieurskunst und italienisches Design ein durchaus reizvolles Produkt ergeben. Die aktuelle Literatur zu interkulturellem Management betont gerade diesen Synergieeffekt im Zusammenspiel zweier Kulturen, der angestrebt werden sollte; und dies ist ebenso bei Produktqualität machbar. Auch Reed et. al betonen, dass Kultur dazu beitragen kann, einen nachhaltigen Wettbewerbsvorteil zu schaffen, jedoch unter zwei Einschränkungen: wenn sich diese entweder kohärent darstellt oder die Synergie genutzt werden kann; allenfalls ist mit Reibungsverlusten zu rechnen. Sehr wohl können sich jedoch Unternehmenskulturen über Nationalkulturen hinwegsetzen, da nach Schein die Kultur in die Gruppe eingebettet ist und nicht umgekehrt; die Frage in Bezug auf Qualitätsmanagement bleibt dann bestehen, inwieweit diese Unternehmenskulturen die Nationalkulturen mit ihren Produkten „bedienen“ können:

#### 4. Interkulturelle Marktstrategien

Seit einigen Jahren steht bei vielen Unternehmen die Qualität im Mittelpunkt. Sie hat eine zentrale Stellung, weil sie ein immer wichtiger werdender Faktor für den langfristigen Markterfolg ist. Nicht-Qualität und dessen Folgen kann sich kein Unternehmen leisten. Qualität wird gleichgesetzt mit Differenzierung gegenüber dem Wettbewerb, Vergrößerung der Marktanteile, Kostenreduzierung, Steigerung der Produktivität, Erhöhen der Kundenzufriedenheit, und Verbesserung des Gewinns.

Will ein Unternehmen auf einem fremdkulturellen Markt ein Produkt einführen, welches letztendlich durch Qualität überzeugen muss, so ist der kulturelle Hintergrund in höchstem Maß zu beachten. Die kulturellen Verhaltensweisen („patterns“) des Kunden als „kollektive Programmierung des Geistes“ spielen eine bedeutende Rolle, „first, as they relate to customer behavior and, second, as they affect the implementation and of marketing programs within individual markets and across markets.“ (Czinkota & Ronkainen, 2004 b), Kultur als gemeinsam geteiltes Wissen, als Orientierungssystem für soziales Handeln, als der „richtige Weg“, eine Angelegenheit zu bewerkstelligen, ist keine Nebensache, sondern essentieller Bestandteil internationalen Managens: Johnson & Johnson zum Beispiel hatten relativ wenig Erfolg darin, in Japan ein Babypuder zu vermarkten, weil die japanischen Hausfrauen fürchteten, durch dessen Anwendung die Küche zu verschmutzen. Das Unternehmen stellte daraufhin Puder-Pads her, die es erlaubten, das Puder sparsam anzuwenden (Czinkota & Ronkainen, 2004 c). Der anwenderbezogene Ansatz macht deutlich, dass hier die Qualität im Auge des Betrachters liegt; folglich haben diejenigen Erzeugnisse die höchste Qualität, die die Bedürfnisse der Konsumenten am besten erfüllen. Dass Qualität hier mit der Einstellung zum Produkt beginnt, zeigt das Beispiel der Walkman-Einführung durch den Sony-Vorsitzenden Morita. Der Walkman wurde konzipiert in der Annahme, Musik zu hören, ohne andere zu belästigen (Gruppenkultur). In Europa jedoch trat der Walkman seinen Siegeszug unter dem Blickwinkel an, Musik zu hören und dabei von anderen nicht belästigt zu werden (individualistische Kultur) (Trompenaars, 1993). So gesehen sind Anforderungen an ein Produkt durch kulturelle Einstellungen bestimmt, daher nicht immer planbar oder sogar gegenläufig – im Falle Sony kann sich trotzdem der Erfolg einstellen. Als zweites Beispiel mag der VW Golf dienen, in Europa ein Verkaufsschlager, konnte er in den USA nie reüssieren – ganz im Gegensatz zum neuen Beetle. In Mexiko produziert, konnte dieser Wagen vom Prestige her in Europa den Kaufpreis von ca. 18.000 Euro nicht rechtfertigen! (Keegan & Schlegelmilch, 1999 a). In den USA dagegen sprach das Auto durch seine außergewöhnliche Form (Design als Kriterium für Produktqualität) eine spezielle Käuferschicht vor allem emotional an. Während in Österreich etwa – ein drittes Beispiel - die Qualität des Waschmittels Persil mit Zukunftswerten (doppeldeutiger Slogan: „rein in die Zukunft“) und Familie, mit Sich-Wohlfühlen in der Gemeinschaft durch Sauberkeit vermarktet wird, zählt nach Auskunft der österreichischen Countrymanagerin in Tschechien allein die Waschkraft als Qualitätskriterium! Da dies in Österreich bereits vorausgesetzt wird, kann nur über zusätzliche Werte das Produkt vermarktet werden. Vor allem zwei Faktoren in der Gesellschaft sind maßgebend für die Akzeptanz und Vermarktung eines Produktes oder einer Dienstleistung: Erziehung einerseits und Referenzgruppen andererseits. Während mit der Erziehung die Qualitätsansprüche an ein Produkt steigen, bestimmen Referenzgruppen wie Familie, Freundeskreis, Kollegen die Werte

und Einstellungen, die sich auf das Verhalten auswirken, welches wiederum bestimmt, nach welchen Kriterien wir Produkte auswählen und kaufen.

Unkenntnis der Lebensweisen und kulturellen Hintergründe haben eine direkte Auswirkung auf den Unternehmenserfolg. Hier ist vor allem ein enges Zusammenspiel zwischen Produktentwicklung, Marketingabteilung und Marktforschung vonnöten, um die Dienstleistung bzw. das Erzeugnis in einem fremdkulturellen Markt erfolgreich einzuführen. „While products that hit the right cultural buttons can be huge successes in foreign markets, not all top brands will translate easily from one culture to another“ (Czinkota & Ronkainen, 2004 d). Dieser Adaptionsprozess in Bezug auf die kulturellen Variablen ist oft genug begleitet von „trial and error“. Vor allem bei „sensitiven“ Produkten wie Verbrauchsgütern (Keegan & Schlegelmilch, 1999 b), und Lebensmitteln, ist es nötig, ihre Verwendung durch den Konsumenten, deren Einstellung zum Produkt und die Verkaufsströme zu beobachten. „Research studies show that, independent of social class and income, culture is a significant influence on consumption behavior and durable goods ownership.“ (Keegan & Schlegelmilch, 1999 c), Heinz Co. zum Beispiel verkauft Ketchup in den USA in einer milderer Variante, während in Europa eine schärfere Variante bevorzugt wird; in Zentraleuropa existiert neben der milden Variante auch das bekannte „Hot Ketchup“: „The buying behaviour of consumers is heavily influenced by tastes and preferences of their own culture“ (Keegan & Schlegelmilch, 1999 d). Diese Vorlieben und Geschmäcker bilden einen wesentlichen Aspekt der Qualität eines Produktes, da sich nur durchsetzen kann, was den Kundenansprüchen entgegen kommt.

Möller/Svahn untersuchen in diesem Zusammenhang den Einfluss von Kultur auf das Wissensmanagement innerhalb verschiedener ethnischer Unternehmensnetzwerke, da Kultur als entscheidender Faktor für die Art von Unternehmenskommunikation gesehen wird: „Our basic assumption is that the nature of the cultures involved in the network through the ethnic background of the member firms and the type of network, both influence the barriers faced in knowledge sharing“ (Möller & Svahn, 2004a). Ein zentrales Element dieser Beeinflussung stellt das Wertesystem dar, da jedes Produkt oder jede Dienstleistung Werte impliziert, die eine gemeinsame Gruppe erschafft und teilt. Da dieses Wertesystem einer Kultur unterliegt, stellt diese ein komplexes System dar und Produktentwicklung und –einführung auf einem fremdkulturellen Markt können nur Erfolg haben, wenn das Produkt den Kundenwünschen innerhalb deren Wertesystem begegnet. Die Autoren unterscheiden drei Wertesysteme, die sich entscheidend auf diese Produktentwicklung auswirken: **stabile Wertesysteme, etablierte Wertesysteme und zukünftige Wertesysteme**. Stabile Wertesysteme ändern ihre Ausrichtung nicht, als Beispiel wird die Auto-Zulieferindustrie genannt sowie die Distributionsnetze der Firmen Toyota, Dell, IKEA und Nike. Etablierte Wertesysteme dagegen werden durch Wertzuwachs und lokale Änderungen modifiziert, als Beispiel dienen Forschungs- und Entwicklungsnetzwerke wie auch Changemanagement in Geschäftsprozessen. Es geht um das Erschaffen neuen Wissens und für Produktentwicklung für einen fremdkulturellen Markt stellt diese Art von Netzwerk gute Voraussetzungen dar, da es sowohl in die Ausgangskultur integriert wie auch anpassungsfähig ist. Die Ausgangskultur ermöglicht die Basis, auf dessen Matrix die Produkte für die Zielkultur adaptiert werden können. Inwieweit die Zielkultur selbst über deren Konsumenten direkten Einfluss auf die Produktentwicklung hat, die synergetischen Elemente von Kultur als „idealer“ Anspruch interkulturellen Managens verwirklicht werden, wird in

der Literatur zu internationalem Marketing zwar diskutiert, jedoch derzeit noch nicht umgesetzt. Zukünftige Wertesysteme verlangen nach radikalen Änderungen im derzeitigen Wertesystem und im Erschaffen neuer Aktivitäten. Internetportale und mobile Telekommunikation stellen hierfür ein Beispiel dar. Für die Entwicklung und Herstellung neuer Produkte in Bezug auf Kunden innerhalb einer Kultur eröffnet dieses Wertesystem zwar viele Möglichkeiten, ist jedoch auch mit erhöhtem Risiko verbunden: "Uncertainty and ambiguity related to value activities and to actors and their capabilities are inherent features of this landscape (...)". Forschungs- und Entwicklungsarbeit – die in das etablierte Wertesystem fällt – wäre vorzuschalten.

Die Autoren unterlegen die drei Netzwerktypen im Weiteren mit vier kulturellen Ausrichtungen nach Hofstede und Triandis: „Triandis and his colleagues suggest that the four cultural patterns derived by combining these dimensions—vertical–individualistic (VI), vertical–collectivist (VC), horizontal–individualistic (HI), horizontal – collectivist (HC)—strongly influence how information and knowledge may be selectively transferred and processed ” (Möller & Svahn, 2004b), VI-Kulturen sind nach den Autoren Frankreich, Deutschland, Großbritannien und die USA, VC-Kulturen China, Indien, Korea und Singapur, HI-Kulturen Australien, Dänemark und Schweden; die einzige HC-Kultur stellt Japan dar, wobei letztere, kombiniert mit einer VI-Kultur, die größte interkulturelle Herausforderung darstellt. (z. B. Deutschland – Japan). Gerade diese Überwindung jedoch ist essen tiell für das Entwickeln neuer, spezialisierter Produkte und einer kundenorientierten Ausrichtung und fällt in das etablierte, jedoch modifizierbare Wertesystem. Die Autoren schließen mit Implikationen für interkulturelles Managen, um die Barrieren zu überwinden, die sich ebenfalls bei Hofstede und Triandis finden. So betonen sie, dass in individualistischen Kulturen die Beteiligten persönliche Ziele und Motivation höher schätzen, wohingegen in kollektiven Kulturen die Teamziele und Teambelohnung Vorrang haben. Persönliche Kommunikation und Verschriftlichung werden für Konfliktlösung in individualistischen Kulturen eingesetzt, in kollektivistischen wird Gruppenkommunikation bevorzugt. Allgemein werden die Toleranz für mehrdeutige Situationen, kulturelle Sensitivität und Empathie für die Entwicklung interkultureller Kompetenz hoch eingeschätzt. Nicht zu unterschätzen und oft übersehen ist in diesem Zusammenhang die Tatsache, dass Forschung selbst nicht in einem kulturlosen Raum stattfindet, wie zum Beispiel bei Stashevsky und Elizur an Hand ihrer Untersuchung, welche Auswirkungen die Teilnahme der Mitarbeiter am Entscheidungsprozess für Qualitätsmanagement hat, konstatieren. Die Studie wurde in Israel durchgeführt, einem, wie die Autoren betonen, sich dynamisch entwickelndem Land, welches bedingt, dass Mitarbeiter an Entscheidungsprozessen beteiligt werden wollen. Jedoch kann dies nur in Kulturen mit relativ niedriger Machtdistanz funktionieren und die Autoren schränken ein: „In Israel, a dynamic developing country, perhaps people are more inclined to participate in change programs, and are rather interested to be involved in decision-making. In more conservative societies, however, it may be that people are more ready to accept decisions and follow instructions ” (Stashevsky, & Elizur, 2000).

##### **5. Implikationen für global agierende Unternehmen**

In einer globalisierten Welt sollten internationale Unternehmenszusammenschlüsse verstärkt zu einem Wettbewerbsvorteil werden, die Realität jedoch spricht eine andere Sprache: Wie stark die kulturellen Aspekte dabei ins Gewicht fallen, mag die Tatsache verdeutlichen, dass ca. 80% internationaler

Unternehmenskooperationen und strategischer Allianzen fehlschlagen und zu einer Situation führen, wo es notwendig wird, die kostspielige Zusammenführung wieder zu trennen. Bei den Expatriates ist die Lage etwas besser: ca. ein Drittel des Auslandspersonals (zwischen 10% und 45%) ist nicht imstande, sich an die neue Umgebung anzupassen und muss den Aufenthalt vorzeitig abbrechen. Die Ursache für das Scheitern der transnationalen Unternehmungen liegt dabei weniger bei den technischen, finanziellen und strategischen Problemen (30%), sondern ist in den kulturellen Unterschieden zu suchen (70%).

Mangelnde und nicht mögliche Anpassung an die Gastkultur führen psychologisch zu einem Ingroup-Outgroup-Denken, das zu einem vorzeitigen Abbruch der Aktivitäten führt. Da nach Worchel (Worchel, 2005), Sicherheit und Existenz ein zentrales Merkmal von (kulturellen) Gruppen darstellt, führen Verunsicherungen in diesem Bereich zu einer Abwehrhaltung der anderen Gruppe gegenüber: Mitglieder, die die eigenen Gruppennormen verletzen, sehen sich Zensur und Bestrafung ausgesetzt. Da ein Expats eine Mittlerfunktion als Förderer und Brückenbauer einnehmen sollte (siehe im Weiteren Cassidy), steht dieser permanent zwischen den Polen Heimatkultur/Heimatunternehmen und Zielkultur/Tochterunternehmen. Wie gut diese Vermittlung gelingt, ist vor allem auf die Fähigkeiten des Expats zurückzuführen, erfolgreiche Kommunikation herzustellen. Aus diesem Grund interessiert sich die interkulturelle Management-Literatur für die Eigenschaften, die ein internationaler Manager aufweisen soll. Welche Einstellungen Führungskräfte im Ausland aufweisen sollten, um in einer fremden Umgebung zu reüssieren, ist Ziel einer Studie von Cassidy: „It seems reasonable to argue that understanding the experiences of leaders, as they transition to a new culture and attempt to communicate effectively in a new environment, becomes more and more essential. The purpose of this study was to investigate the relationship between the deeply held values, beliefs, and assumptions of expatriate leaders, and their effective leadership practice.“ (Cassiday, 2005), Die Studie basiert auf 11 teilstrukturierten Interviews mit der Annahme, dass Welt immer subjektiv aufgenommen wird je nach dem eigenen Wertesystem und diese daher auch individuell geformt wird. Unterlegt wurden der Studie vier Variablen nach Perry (Stadien der Pluralität), Hall (Werteorientierung), Kluckhohn und Strodtbeck (kulturelle Werte) sowie Rosen et. al. (globale Bildung). An Hand dieser Kriterien zeigt die Studie, dass internationale Führungskräfte die kulturelle Relativität anerkennen, Handlungsorientierung aufweisen, Selbstakzenturierung für wichtig erachten (die Welt als “creative project in which I want to participate and to which I have something unique and different to offer”) (Cassiday, 2005 b), und Best-Practice-Modelle umsetzen, wobei Werte und Verhaltensweisen jeder möglichen Kultur für diesen Zweck utlisiert werden. Vertrauensbildende Maßnahmen, das Schaffen von Sicherheiten, effektive Kommunikation (Zuhörvermögen!) sowie das Erkennen von verbalen und nonverbalen Schlüsselsignalen spielen ebenso eine entscheidende Rolle wie etwa Problemlösung in multikulturellen Teams. Der Führungskraft kommt die Aufgabe eines Förderers zu, wobei das Ermöglichen von Kommunikation und Interaktion den zentralen Wert darstellt. „Conflict resolutions skills on multicultural teams often depend on the leaders mediation skills and knowledge of intercultural issues“ (Cassiday, 2005c). Die Studie kommt zu dem Schluss, dass sich internationale Erfahrung auf die Weltsicht der Expats entscheidend auswirkt, wobei die Welt als kreatives Projekt gesehen wird, an dem man teilhaben möchte. Diejenigen Führungskräfte, die am erfolgreichsten mit ihrer Leistung waren, konnten die persönliche Wahrnehmung und die eigenen Annahmen in Bezug auf die Kulturen

reflektieren und eine „kreative Spannung“ halten, wobei es nötig ist, nicht nur über, sondern auch von der Kultur zu lernen. Hand in Hand damit geht die Erkenntnis, sich über die eigene Kultur bewusst zu werden.

Auch Jun, Lee und Gentry (1997) betonen analog zu Cassiday, die Schwierigkeiten des Akkulturationsprozesses und die Notwendigkeit der Expats, sich an die Gastkultur erfolgreich anzupassen. Die Notwendigkeit zeigt sich anhand des bereits erwähnten Gruppendrucks, die die Expats dazu „zwingt“, eine Anpassung vorzunehmen, da sie über das Tochterunternehmen einer neuen kulturellen Gruppe angehören: „Culture and ethnic roots define the group, and the group becomes active in pressuring group members to participate in protecting and perpetuating the culture“ (Worchel, 2005). Die Studie untersucht die direkten und indirekten Effekte dieser kulturellen Anpassung auf das Commitment zur Auslandstochter wie zum Stammunternehmen. Zwei Hypothesen gehen der Untersuchung voran, zum einen die Behauptung, das Commitment zur Auslandstochter sei in direkter und positiver Weise verbunden mit dem Grad des kulturellen Anschlusses einerseits sowie dem Grad sozialer Interaktion mit der Gastkultur andererseits, zum anderen die Überlegung, das Commitment zum Stammunternehmen sei eher indirekt über die Verpflichtung zur Auslandstochter gegeben. Beide Hypothesen werden bestätigt, da sowohl ein Commitment zur Auslandstochter signifikant mit kultureller Berührung und sozialer Interaktion im Gastland korreliert, wie auch die indirekte Verpflichtung dem Stammunternehmen gegenüber durch die Tochterfirma zum Tragen kommt. „It was found that both dimensions of acculturation had direct effects on commitment to the foreign operation, but had only indirect effects on commitment to the parent company through commitment to the foreign operation, as was hypothesized (Jun et al., 1997). Abschließend kann gesagt werden, dass das Stammunternehmen danach trachten sollte, die Expatriate bei ihrer Eingliederung in die Gastkultur zu unterstützen, da nur auf diesem Weg gewährleistet ist, dass das Commitment - über die Auslandstochter - auch zum Stammhaus erhalten bleibt.

Brew/Cairns unterlegen ihrer Studie über den Umgang mit Konflikten zwischen australischen und asiatischen Managern in Bezug auf die Wichtigkeit der daran beteiligten Kulturen ebenfalls die Dimensionen von Individualismus – Kollektivismus sowie hoch und niedrig kontextualisierten Kulturen. Ausgehend von der Annahme, dass Kultur den wichtigsten Faktor im Konfliktverhalten darstelle, werden drei Konfliktsituationen beleuchtet, die die Kriterien **Zeitdruck, kulturelle Identität des Konfliktpartners und den Status der Beteiligten** umfassen. Diese Situationen stehen in engem Zusammenhang mit einem weiteren Kriterium Hofstede's, der Machtdistanz, da Länder Ostasiens eine höhere Machtdistanz und ungleiche Hierarchieverhältnisse aufweisen als westliche Länder, in denen eine niedrige Machtdistanz und ein eher gleichberechtigter Managementstil vorherrschen. Abgeleitet für die Studie wurden aus den beiden oben genannten Dimensionen die Messkriterien direkte und indirekte Kommunikation einerseits sowie die drei Konfliktstile Kontrolle, Vermeidung und Lösungsorientierung (Verhandlung, Kompromisse) andererseits. Die generelle Hypothese, australische Expats wählten einen stärker direkten und ostasiatische Gastlandangehörige einen eher indirekten Konfliktstil, wird in der Studie nur in Bezug auf einen (westlichen) Vorgesetzten unterstützt. Beide Parteien jedoch bevorzugten unter Zeitdruck einen stärker direkten bzw. weniger indirekten Konfliktstil oder aber vermeiden die Konflikte, wenn es möglich ist, um eine Deadline halten zu können: „When the clock becomes important, then there is less time for socialising and relationship building during the working day“ (Brew & Cairns, 2004 a).

Was die kulturelle Identität der Konfliktpartner betrifft, kommt die Studie zu dem Schluss, dass die Vorgesetzten des Gastlandes direkt kommunizieren ohne Rücksicht auf die Kultur der Mitarbeiter, während Expat-Vorgesetzte eher einen indirekten Konfliktstil wählen, haben sie mit ostasiatischen Mitarbeitern und Vorgesetzten zu tun (im Unterschied zu westlichen Mitarbeitern). Dies gilt auch umgekehrt für die Expat-Mitarbeiter: "Overall, expatriates were more indirect, less controlling, more diplomatic and less frank when dealing with an Asian superior compared to a Western superior. Host-nationals tended to be indirect with superiors regardless of their cultural identity" (Brew & Cairns, 2004b). Daraus lassen sich zwei Schlüsse ziehen: Zum einen sind Expats stärker darauf angewiesen, sich der Gastkultur anzupassen – eine wichtigen Fähigkeit interkulturellen Managens -, zum anderen spielt das Hierarchieverhältnis mindestens eine ebensolche Rolle wie die Kultur, da "von unten nach oben" indirekt kommuniziert wird, „von oben nach unten“ nur dann indirekt, wenn in einer Art "dritten Kultur" kommuniziert wird, wo der Expat-Vorgesetzte sich für die Konfliktlösung nicht auf die eigene Herkunftskultur beziehen kann. Dies steht in enger Beziehung zu dem dritten untersuchten Kriterium Kultur und Status. Die Studie zeigt auf, dass die Angehörigen des Gastlandes generell einfülsamer reagieren als Expats, da sie einen stärker indirekten, diplomatischen und weniger kontrollierenden Stil vor allem Vorgesetzten gegenüber und einen eher direkten Mitarbeitern gegenüber pflegen, während dieser Unterschied bei Expats kaum eine Rolle spielt. In Kulturen mit hoher Machtdistanz jedoch werden Status und Ruf einer Person stärker geachtet. Die Machtdistanz gilt als stärkste Unterscheidung für den Umgang mit Konflikten, wobei neben dieser kulturellen Dimension vor allem die konkreten Umstände der Konfliktsituation für das Handeln der Betroffenen zum Tragen kommen.

## **5. Resümee**

Qualität kann nicht so einheitlich und klar bestimmt werden, wie moderne Managementkonzepte es gerne annehmen. Qualität als Begriff, der einen kulturellen Wert impliziert, muss folgerichtig kulturell geprägt sein, da Werte aus der Kultur abgeleitet sind. Geht man darüber hinaus vom anwenderbezogenen Ansatz aus und berücksichtigt man die kulturelle Beeinflussung, liegt die Definition von Produktqualität auf der Kundenseite. Kulturelle Unterschiede lassen sich hier einerseits in der direkten Produktqualität sowie andererseits in der Verwendung des Produktes feststellen, daher ist Kultur ein wesentlicher Faktor bei der Planung von Marketingstrategien und damit der Gewinnoptimierung des Unternehmens. Welche Fähigkeiten und Einstellungen interkulturell tätige Manager deshalb „im Repertoire“ haben sollten, bildet den Abschluss vorliegender Arbeit.

## Literaturangaben

- Ahire S., Dreyfus P. (2000), The impact of design management and process management on quality: an empirical investigation. *Journal of Operations Management*, Vol 18, Issue 5, p. 549–575
- Brew F.P., Cairns D.R. (2004), Do culture or situational constraints determine the choice of direct or indirect styles in intercultural workplace conflicts? *International Journal of Intercultural Relations*, Vol, 28, Issue 5, p.331–352
- Cassiday P.A (2005), Expatriate leadership: An organizational resource for collaboration. *International Journal of Intercultural Relations*, Vol, 29, Issue 4, p.391-408
- Czinkota M.R., Ronkainen I.A. (2004) *International Marketing*, Thomson Learning, Mason
- Fink G., Meierewert S. (2001) *Interkulturelles Management. Österreichische Perspektiven*, Springer, Wien
- Hoffman H.E. et. al. (2004) *Internationales Projektmanagement. Interkulturelle Zusammenarbeit in der Praxis*, DTV, München
- Hofstede G., (2006) *Lokales Denken, globales Handeln. Interkulturelle Zusammenarbeit und globales Management*, Beck/DTV, München
- Ionescu S. (1997) *Exceleța industrială. Practica și teoria calității*, Editura economică
- Jun S. et al. (1997) The effects of acculturation on commitment to the parent company and the foreign operation. *International Business review*, Vol 6, Issue 5, p.519–535
- Keegan W.J., Schlegelmilch B.B. (1999) *Global Marketing Management*, Prentice-Hall, Essex
- Meierewert S., Horváth-Topcu K. (2002) Kulturstandards im Vergleich: Österreich und Ungarn, in: *Österreichische Perspektiven*
- Möller K., Svahn S. (2004) Crossing East-West boundaries: Knowledge sharing in intercultural business networks. *Industrial marketing Management*, Vol. 33, issue 3, p.219–228
- Nair A. (2006) Meta-analysis of the relationship between quality management practices and firm performance – implications for quality management theory development, *Journal of Operations Management*, Vol 24, Issue 6, p.948–975
- Reed R. et al. (2000) Total quality management and sustainable competitive advantage, *Journal of Quality Management*, Vol 5, Issue 1, p.5-26
- Regius B. von (2006) *Qualität in der Produktentwicklung. Vom Kundenwunsch bis zum fehlerfreien Produkt*, Carl Hanser Verlag, München
- Reeves B., Sousa R., Voss A.. (2002) Quality management re-visited: a reflective review and agenda for future research, *Journal of Operations Management*, Vol 20, Issue 1, p.95-106
- Schein E. (2003) *Organisationskultur*, Edition Humanistische Psychologie, Bergisch-Gladbach
- Schooper Y. (2004) Interkulturelle Unterschiede im Qualitätsverständnis, in: *Internationales Projektmanagement*, dtv, München
- Sousa R., Voss C. (2002) Quality management re-visited: a reflective review and agenda for future research. *Journal of Operations Management*, Vol 20, Issue 1, p.91–109
- Stashevsky S., Elizur D. (2000) The effect of quality management and participation in decision-making on individual performance, *Journal of Quality Management*, Vol 5, Issue 1, p.53–65

Thomas A., Kinast E., Schroll-Machl S. (2005) *Handbuch Interkulturelle Kommunikation und Kooperation*, Band 1: Grundlagen und Praxisfelder, Vandenhoeck & Ruprecht, Göttingen

Trompenaars F. (1993) *Handbuch globales Managen. Wie man kulturelle Unterschiede im Geschäftsleben versteht*, Econ, Düsseldorf

Worchel S. (2005) Culture's role in conflict and conflict management: Some suggestions, many questions, *International Journal of Intercultural Relations*, Vol 29, Issue 6, p.739-757

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