

Does Economic Competence Indicate the Individual Level of Agreement with Market Economy?

Introduction

The economic system in a democracy requires legitimacy. But, particularly the activities within European economic policy, which in general aims at improving living conditions, are frequently seen with a strong scepticism by the European citizens. So, research on attitudes towards European – as well as towards national – economic institutions and measures is of substantial interest to politicians. Since functional conditions of market economy are relatively complex, formal economic education is assumed to be a prerequisite for understanding them. Further on, we assume a positive correlation between the level of this understanding and the personal level of agreement with fundamental aspects of market economy. This correlation is the focus of our paper and of our future empirical research.

We want to elicit the strength of this relationship because we think it affects central objectives of economic didactics. Economic education aims to empower pupils with competence to evaluate and to decide on economic situations as well as on economic policy. Therefore, the first paragraph will generally focus on the didactic aspects of our approach and particularly report on empirical studies about the status of economic literacy. These studies regularly diagnose deficits which might relate to individuals' sceptical view on market economy.

Afterwards the concept of economic competence has to be discussed. Firstly, we will give an overview about research results concerning the cognitive development of economic competence and factors influencing this development. Secondly, we present the competence model underlying our prospective study.

In addition to economic competence and the level of general cognitive development other factors play a role in the perception of social institutions. For example various studies suggest a cultural stamp that indicates value judgements. A further factor can be the socio-economic background of the individual. The third paragraph will report on those studies.

As a conclusion of analyzing existing studies we finally present an 'influence model' reflecting the connection between perception and evaluation of market phenomena and the

degree of economic competence. It will include moderating variables like culture bound social representations, socio-economic status and curricular conditions. The paper ends sketching the methodological approach.

Economic Competence and Agreement with Market Economy – A Question of Didactics?

A wide agreement in the scientific community of economic didactics exists about the objectives of economic education in school. As a part of general education it ought to enable learners, confronted with economic situations, to decide and act in an adequate and reflected way. Finally, they should be able to and interested in forming these situations in order to secure and improve society as one worth to live in (DeGöB 2004: 5). All this is required from individuals in different roles: as a consumer, as an employee or employer and as a citizen. We are focussing our interest on the last one. As citizens people have to judge economic policy as part of the systemic framework of society, e.g. a market economy.

To understand the existing framework thus refers to the understanding of markets as a theoretical concept. As theoretical concept competition's systemic effects, the key mechanism of free-market economy, are not directly observable. Economic education however aims to build up the necessary competence. It is a competence divided in the dimensions of (1) economic knowledge and thinking, (2) using economic knowledge and thinking in relevant situations, and (3) economically reflected value judgements (Beck 1993: 3).

The objectives of economic education concerning value judgements aren't affirmative. They do neither contain "... blind acceptance of neo-classic free-market economics ..." nor "... developing positive attitudes to industry ...", but education wants "... to develop individual capacity in critical thinking and informed decision making." (Ford 1992: 26) If people did not need economic competence to give value judgements on economic policy, the legitimacy of economic education as a part of general education would be unsoundly based.

Besides a feeling of justice people have to have domain specific understanding. An evidence-based, not statistically validated study of CARRITHERS and PETERSON (2006) reinforces this position. Students of the business and economics unit on one side and students of theology classes at the authors' university in Seattle on the other side gave contradictory value

judgements about market economy. Often the first ones did not even see a connection between justice and economic system, the others evaluated market economy as unjust in general. CARRITHERS and PETERSON conclude (2006: 375): “They fail to address opposing ideas critically because they lack any context to do so. ... Armed with only one side of an enormous, complex issue, or unable to navigate the lines of the debate, they will not be equipped to help design social policy.”

Insofar we are convinced that our project is an important issue on the agenda of economic didactics. Didactics as a science does not only research on the learning-process itself, i.e. contents, objectives, media and methods, but also on the individual and social conditions and consequences of (economic) education. Why do we need economic education? is the fundamental question in this context.

Studies about economic literacy state deficits.¹ If those deficits correlate with negative attitudes or even disagreement with market economy, economic education could help strengthening legitimacy of economic institutions. The majority of German studies is based on a translation of the Test of Economic Literacy (TEL). WALSTAD and LARSEN firstly used it in a 1993 US-American study with adults and concluded: “Unfortunately, most Americans know little about economics.” (Walstad/Larsen 1993: 1226) The first German application of the test showed similar results (Beck/Krumm 1994).

Following studies comprised students of all kinds of secondary schools (Sczesny/Lüdecke 1998; Müller/Fürstenau/Witt 2007) and one tested university entrants (Beck/Wuttke 2004). In sum the students could seldom solve more than 50% of the questions. In another test, not based on the TEL, secondary school students reached a rate of right answers between 29% and 59%, depending on school type and curricular settings; this was conceived as at least partly deficient by the authors as well (Würth/Klein 2001).

Afterwards we will discuss the reasons for these results. According to the knowledge about formal education as a crucial factor of developing economic competence we will then integrate the curricular frame as one variable in our influence model.

¹ We limit the reflection on German studies. There are also surveys in other industrialized countries with similar results as in Germany but we haven't done an intensive literature research yet. That will be one of the tasks in our European project.

Factors Influencing Economic Competence

Cognitive Development

One crucial finding is that the cognitive development of economic understanding takes a Piagetian path. The understanding develops from a tangible to an abstract approach. Thus, age and years of schooling are probably the most important factors to explain economic understanding.

CLAAR (1990) and FURNHAM/LEWIS (1986) analyse preceding studies beginning from the 1950s. These compilations refer a lot of common results and however quite a few differences. They identified four to six stages of development in economic understanding. These stages are often formulated vague and are at the moment not interesting in detail. The decisive point is an increasing generalization of economic concepts corresponding to the general cognitive development. This means, with growing age these concepts can be applied to more and to more complex circumstances (Claar 1997: 197). In the beginning, interpretations of economic terms are subjective and related to the own horizon of experience. Later the concepts are integrated in a system of relationships and not seen in an isolated way (Furnham/Lewis 1986: 27).

Typically the research design includes interviews about categories seen as economically fundamental, e.g. money, price, value, profit or trade. The interviewees regularly are children and adolescents in the age between 5 and 17. CLAAR (1990) additionally includes adults as a comparison group. Younger Children interpret economic transactions from the perspective of a single actor and have no understanding of systemic dependencies (Leiser 1983). In the study of CLAAR (1990: 25 ff.) the youngest, 10 years old participants, link the value of a good to its size. Later they are able to recognize the importance of production costs influencing the price and only adolescents (> 15) integrate competition and profit-seeking in their calculation.

Not only cognitive psychologists' but also social psychologists' studies about social representations of economy illustrate that "... the types of definitions employed seemed to evolve toward the use of more abstract notions." (Vergès/Bastounis 2001: 22) To sum it up in the words of LEISER/HALACHMI (2006: 11) – one of the latest studies upon cognitive development in our context – the following is valid: "As expected, Age had a highly significant effect." Nevertheless "the literature on children's and adolescents' understanding

of the economic world is highly diffuse and of varying quality ... There is, however, a good deal of disagreement about the number of stages, the points of transition and the exact understanding in each stage.” (Furnham/Lewis 1986: 44)

A series of studies suggested a connection between the described development and everyday experiences of the respondents. LEISER/HALACHMI (2006) for example argue in this way. They presented children, aged from 6 to 12, short stories dealing with changes in demand and supply and the effects on prices. The answers showed a better understanding of changes in demand and their price-effects. The authors take that as a proof for better understanding of issues inside the horizon of experience. Children act as buyers and take the seller’s price as given because he is fixing it. When he recognizes an increasing demand it’s obvious for the children that he raises his price. The authors assume that it is not just as easy to understand why a seller should fix another price when the supply increases or decreases.

Other surveys explored national differences in understanding economic issues. For example, African children understood the principle of profit earlier than British. The researchers assumed a connection to the African children’s deeper experience in bargaining (Furnham/Lewis 1986: 30). But, overall, existing results are contradictory. As a conclusion with regard to the studies made in the last 50 years, the influence of general cognitive development seems to be significantly higher than that of experiential involvement (Hutchings/Fülöp/Van den dries 2002: 11).

Gender and Socio-economic Status

Nearly all tests carried out on economic understanding reveal gender differences in performance. In the Test of Economic Literacy (TEL) female subjects regularly do worse than male subjects. It is a cross-cultural effect, measured in Germany as well as in Austria, Switzerland, the United Kingdom or the United States (Beck 1993: 70; Gleason/Scyoc 1995: 208). But also on the Graduate Record Exam (GRE) Subject Test in Economics women achieve lower scores on average (Hirschfeld/Moore/Brown 1995: 3). The results do not vary upon the different groups of subjects. As a rule these are students of secondary schools or college-students, but in some surveys also adults were tested. Just a few test studies could not reproduce significant gender gaps, e.g. JACKSTADT/GROOTAERT (1980).

Concerning the reasons of these differences various hypotheses were tested. For example female subjects usually perform worse on multiple-choice-tests. The TEL or the GRE are constructed as multiple-choice-tests, but the gap rested significant even after eliminating that factor respectively after answering questions on presented essays (Hirschfeld/Moore/Brown 1995: 4). The hypothesis that lacking mathematical competence could explain the gap couldn't be verified too (ibid.).

There is a connection between attitudes in respect of economic matters and test performance.² The scores correlate positively and male subjects on average show a more positive attitude (Beck 1993: 95; Hirschfeld/Moore/Brown 1995: 8), though the causal direction of the correlation is of a complex nature (Beck 1993: 98). A German study with older students of grammar schools elicited not only a worse performance of females but also a 'fundamental aversion' of the girls to themes of economic life, and partially total disinterest (Würth/Klein 2001: 138).

Social class effects also show up in performing economic competence. For example, middle class children are more familiar with banking vocabulary and working class children have a more thorough knowledge "of the world of manufacturing and production" (Roland-Lévy 2002: 28). JACKSTADT/GROOTAERT (1980) found that the occupational situation of parents is a variable to explain differences in test performance. Here, socio-economic effects mix up with gender effects. If father's occupation belongs to one of the categories "professional, business, or managerial position ... students' ... scores are positively affected ..." (ibid: 36) "For female students it was the other way round." (ibid: 39)

On the other hand BECK emphasizes that in his extensive studies on the TEL a correlation between family socialisation and performance was not reproducible (1993: 82). Insofar the results concerning the influence of socio-economic background are as heterogeneous as those on gender. In addition class differences are recognizable, looking at value judgements about economic circumstances (Furnham/Lewis 1986: 33 ff.) or looking at economic behaviour, e.g. differences in saving behaviour (Lea/Tarpy/Webley 1987: 379).

² Not only the connection between attitudes and economic test-performance is notable, but also that one between attitudes and economic behaviour. It also shows a gender gap. For example, there are gender-stereotyped ideas on the value of possessing goods with consequences to consumer behaviour (Webley et al. 2001: 9).

Educational Effects

Studies show that educational interventions are effective, but evidence on how they take effect is rather scarce (Berti/Bombi 1988: 202). Didactically fostered learning yields structures of economic concepts different from experiential learning (Lea/Tarpy/Webley 1987: 376). Differences show up in tests on an abstract economic knowledge, like TEL or TEU (Test of Economic Understanding), but also in answers to questionnaires about current economic developments and with methods manifesting social representations of economy.

The best predictor for economic understanding concerning educational variables, nevertheless, is the level of formal education in general. In a representative survey in the USA BLENDON et al. (1997) analysed views about current economic performance : 53 % of college graduates cited the decrease of the unemployment-rate correctly, but only 31 % of the non-college graduates, and 37 % of these even guessed that the rate would be increasing. The results on questions about the development of full-time jobs or the inflation-rate showed similar differences. “On average, Americans with college degrees have views that conform more closely to government economic data than those of non-college graduates.” (ibid: 109) GLEASON/SCYOC (1995) come to similar conclusions. “Adults who had completed some college scored 2.62 points higher, college graduates scored 3.07 points higher, and adults who had attended graduate school scored 6.53 higher than adults with only a high school education or less.” (ibid.: 208)

Further on economic education plays a considerable role. Besides the general level of education the economic background knowledge, proven by formal certificates and attendance of respective courses, is a significant indicator of test performance. People who had visited college economics courses reached the highest score in the test of GLEASON/SCYOC (1995).

WALSTAD/SOPER (1988) also found in tests with high school students that those with a high school economics course performed better in comparison to those without such a background. Similar results were reproduced in a lot of tests. BECK/WUTTKE (2004: 20), e.g., examined university study beginners with the TEL and found competence advantages of subjects with a degree in vocational training. Or another study showed more precise concepts on economic categories like gross national product, national debt, balance of payments or exchange-rate when people had received economic training in earlier times (Zappalà 2001:

183). Otherwise concepts were often rough and vague: CLaar (1990: 21) compiles intervention studies which all come to the conclusion that children develop a better understanding on economic terms and concepts when they receive targeted stimulations in school instruction.

Age and education, and especially economic education, are insofar significant factors influencing economic competence with homogeneous results proved in various studies. Thus, we can assume a positive effect of formal economic education on the level of economic competence. The correlation, therefore, is a salient part of our influence model. MÜLLER et al. (2007: 245 f.) found an increasing probability of correct solutions in the TEL when topics are to be found in the curriculum relevant for the students. It is therefore necessary to deal with this effect in our research. We will thus analyse how economic education is implemented in curricula of schools across Europe. To examine this correlation is also a desideratum because until now research on economic education in schools has been very limited (Hutchings, M./Fülöp, M./Van den dries, A. 2002: 2).

However, even if economic education is implemented in curricula it is not sure that economic competence increases. It depends on the form of curricular integration, on teachers' willingness to teach economic issues and on the economic attitudes of teachers, too. For example, 'Education of Economic and Industrial Understanding' is a cross-curricular theme in the English National Curriculum, but there exists a tendency of teachers to avoid such issues – a tendency also observed in other countries across Europe (ibid.: 5 ff.). Nevertheless we will analyse curricula, because we assume a general relation between domain-specific curricular embodiment and professional training of the concerned teachers, also assuming as a consequence a higher willingness to teach economic issues. Taking this last assumption on the willingness to teach economic issues with the fact that domain competence of teachers (professional training)³ and performance of students correlate positively (Bosshardt/Watts 1990) it is thus plausible to include the relation between curricular importance of economic matters and economic competence into the major framework of our research scheme.

Attitudes on Market Economy and Economic Policy

³ We have to refer to the fact that a connection between curriculum contents and professional teacher training cannot be taken for granted. In Germany with its federal constitution economic issues in general schools – not in vocational schools – are taught in the majority of the Länder by teachers without specific training in economics and business.

In didactics it is usual to speak of ‘value judgements’ describing educational objectives. This is a consequence of the fact that economically shaped situations always require individual decisions. The pedagogically targeted process of decision making ought to include a reflection of social consequences, i.e. value-related consequences for the individual himself and for other individuals. A ‘rational’ decision thus includes an economic and a moral dimension. Value judgements in this strict sense presuppose economic competence.

Therefore, if a questionnaire demands value judgements the items should be designed in way that test persons are to answer from a point of view neutral in regard of economic issues and situations (Liebig 2002: 82; Seeber 2008: 147). The design of an empirical study looking for a connection between competence and judgements has to avoid producing only a methodological artefact by measuring the dependent variable in categories of the independent. Therefore we will ask for attitudes with items requiring judgements in a broader sense that means without requiring an economical or political analysis. This is a usual construction in empirical studies without distinction between value judgements and attitudes. Attitudes are then “conceived of at the individual level as a cognitive (internal) representation combined with a response disposition (external) ...” (Furnham 2001: 118)

If people are questioned about their attitudes on economy as a field of politics, respectively as a market system, a majority agrees with systemic rules or approves basic notions explaining market economy. In 2005 a representative survey in Germany showed that 55 % justified income-differences as incentives, as result of individual performances and as a condition of the market principle (Krömmelbein et al. 2007: 66). In another 2007 poll 47 % preferred to live in a liberal state and only 37 % preferred a welfare-state. On the other hand 42 % considered a welfare-state to be more just and only 30 % a liberal state (FAZ 2007 16. Mai 2007, Nr. 13: 5). And 90 % of the firstly mentioned survey did not agree with the level of income-differences, despite their general positive attitudes on that matter. In the International Social Justice Project too, a majority of subjects in 13 nations tended toward an egalitarian distribution of income (Liebig 2002: 86).

Similar results showed a Hungarian study with students and young professionals: “While the most important features of a well-functioning society were considered to be free economic competition, market-led economic processes, and significant income differentials, at the same

time respondents expressed their wish for full employment and for the state to care for the weak.” (Fülöp/Berkics 2002: 131). Adolescents had similar views (ibid.: 135). In Germany as well, secondary school students associated profit-seeking with market economy but not justice, notwithstanding a general positive attitude (Würth/Klein 2001: 178). We face a paradox: overall people agree with the institutional system of a market economy but in system-internal details they maintain a deep scepticism. Concerning market economy as a general rule-based institution attitudes are more likely positive, concerning the results of market processes they are more likely negative (Seeber 2008: 144).

Recent changes of the economic conditions, e.g. globalization, competition of nations and the thereby stimulated ‘reforms’ in social policy and welfare institutions, are seen as a cause of this tension between fundamental agreement to the rules and a felt justice-gap in reality. We consider these development as a reaction to the generally dynamic and competitive market economy. The system hasn’t changed, but the conditions. Now, economic didactics has to ask if these distortions are a result of lacking economic competence to differentiate the market system in different contexts (in particular national economies and global economy) or a phenomenon rendered by other factors (e.g. horizon of historical and social experience).

BLENDON et al. (1997: 116) hold the rather low level of economic knowledge of Americans combined with a lack on belief in market forces responsible for respondents’ difficulties to make accurate assessments of how economy is performing. Those subjects believe, for example, that increasing prices are a result of companies’ manipulations and not due to the mechanism of supply and demand. LEISER/GANIN (1996) examined Israelite adolescents’ economic values using an inventory with eight scales: (1) Support of the Free Enterprise System, (2) Trust in Business, (3) Economic Alienation and Powerlessness, (4) Government is Responsible for Social Welfare, (5) Against Government Role in Price Setting, (6) Against Powerful Unions, (7) Workers Receive Fair Treatment, (8) Against the Economic Status Quo (ibid.: 99 f.). Parallel they tested the level of economic competence. Multiple regression brought as one of the most important and significant findings that adolescents with a higher score in economic competence supported the concept of a free enterprises more strongly. The others were not especially alienated, but rather sceptical. Further on, those with less economic knowledge supported the welfare function of the state (ibid.: 101).⁴

⁴ There was also an age effect, e. g. older respondents supported the welfare function more than younger (ibid.)

Personal attitudes influence individual behaviour. The economic behaviour of people, e.g. as consumers or employees, is influencing the course of economy. "In short, economic affect may be at least as important as economic cognition in influencing economic behaviour, especially when public choice issues are in question." (Soper/Walstad 1983: 4) A review of studies concerned with the relation of economic knowledge and economic attitudes done by WALSTAD (1996: 179) shows "that increased economics knowledge and more instruction in the subject significantly influence that attitude development." In accordance to WALSTAD's (1997: 203) statement "... economic knowledge has a direct and significant effect on public opinion about many economic issues" and in addition to the referred findings it is worth to explore the influence of economic knowledge on the level of agreement to notions and to reality of market economy.

Some other influence factors on personal attitudes, like the general social representations surrounding the individual, are known (Furnham 2001: 133). "Social representations are social forms of knowledge, free from scientific constraints ..." (Roland-Lévy 2002: 68) Research on social representations explored intercultural effects. It could prove cultural differences even on regional levels (Zappalà 2001: 197 ff.). They are induced of different collective memories, "made up of events as well as ideas, values and norms." (Vergès/Bastounis 2001: 20) Economists call these 'informal institutions'.

In a European study a special attention has to be paid on the differences between older EU member states and transformation states as this difference implies a divergent relationship between formal and informal market-economy institutions. There was a rather smooth co-evolution in older member states. Transformation states' formal institutions have been rapidly changed, resulting in tensions between formal and more slowly developing informal institutions.

Various studies have shown attitudinal difference between members of transformation-states and Western EU members. Fore example, competition is more consciously perceived and made responsible for possible relative welfare losses (Fülöp 1999). Or Hungarian adults "when comparing the present economic and political system with the former socialist one, evaluated the present system more negatively and showed little trust in the future." (Furnham 2002: 131) Because the change of mentalities (informal institutions) is slower than the change of the formal institutional framework, there should be a special focus on education, as a

means to influence mentalities (via the cognitive and affective dimension). A course in economy can also change the attitude to market economy in transformation states (Fülöp/Berkics 2002: 143 ff.).

The socio-economic status of people is a last, but not at all negligible factor influencing attitudes. For example, middle-class subjects tend to explain wealth and poverty by personal characteristics. Richer people are assumed by middle-class children to work harder, to be more intelligent, to be better human beings at all and so on. Upper- and middle-class students have a more liberal attitude and a more positive view on free market, and lower-class students tend to be appealed more by a state-controlled and interventionist system (Leiser/Ganin 1996: 97, 104)

Economic Competence: Modelling Suggestions

In Germany educational standards are discussed since the first PISA-survey. They should be based on competence-models, designed for the various subjects in school. The models are orientated by that one of the PISA-survey and therefore designed in a cognitive psychological way. They should reflect different competence-dimensions of the domain, including fundamental ideas of specific terms, basic knowledge, mental operations and domain-specific methods (Klieme et al. 2003: 19). In addition to these dimensions levels of competence development should be defined.

Although such models are discussed since years, there is none in the field of economic education, at least not an empirically based one. We firstly recur to a proposal of the German Association of Economic Education (DeGöB 2004) with regard to the demanded dimensions. Secondly, we deduce a minimum age of our test persons from the results of the referred development studies regarding their necessary cognitive level.

In general we differentiate between a participant's and an observer's perspective. Knowledge about economically shaped situations of everyday life people acquire first of all in personal experiences. A participant's perspective will be developed out of itself (Leiser/Ganin 1996: 105). In comparison the observer's perspective in its complexity and because of its not experience-based structure, which is specific for the economic domain, needs educational interventions. People have to shift "from conceiving the economic world in individualistic

terms to apprehending the complex system of relationship involved in economic life.” (Lea et al. 1987: 376) Since we will discuss competence and the legitimacy of a market economy, circumstances are concerned which require an observer’s position of the individual. Markets’ coordination results – as systemic effects – are not present and intended in individual market related actions (participant’s perspective) and thus insight into this mechanism does not emerge from these actions. Market is not meant as a concrete place of exchange but as a system of social coordination connecting uncountable individual actions. Thus it gives rise to efficient allocation of financial and other resources (Remmele 2008).

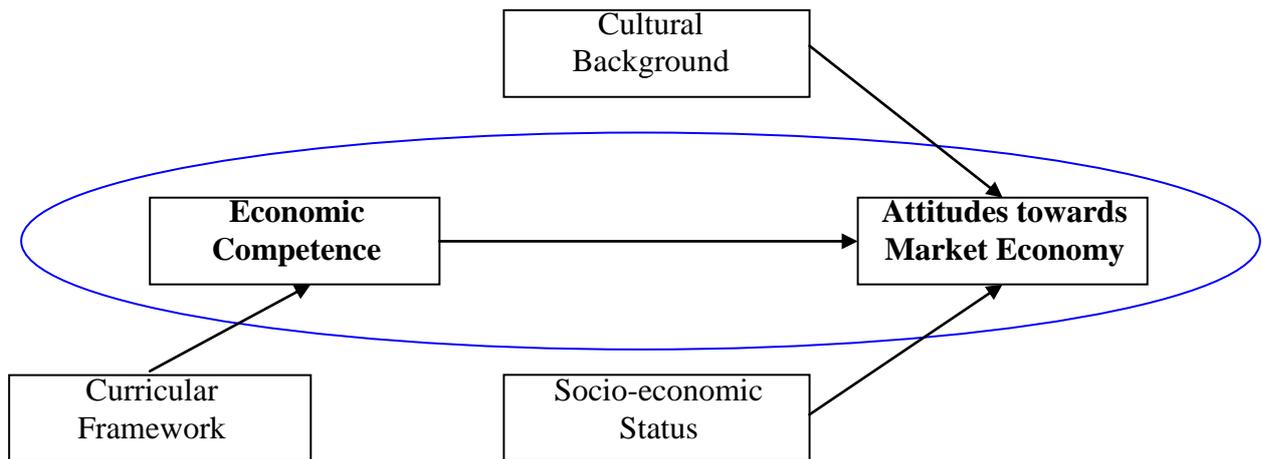
Competences linked to the observer’s position the DeGöB (2004: 5 f.) subsumes under ‘ability to explain associations of the economic system’ and ‘ability to understand and create framing conditions of the economy’. Because value judgements are assumed to be an inherent part of economic competence the DeGöB has included another dimension: ‘ability to judge on conflicts ethically and in perspective’. It is expanding the economic competence in a sense that it gets part of civic education. These three dimensions are touching the field of our research.

Those reflections are important for the design of a study to validate an influence model like it is presented in the following paragraph. On one hand, items covering the required observer’s competences have to be constructed. On the other hand, the test persons have to have reached a cognitive level allowing them to understand complex economic phenomena. The studies referred before lead to the conclusion that the students should be older than 15.

The Influence Model

The pivotal aspect of our research interest is the connection between the degree of economic competence, focussed on a systemic understanding, and value judgements on market phenomena. We found strong hints about other factors influencing people’s attitudes. The following visual representation of our influence model includes these relevant variables.

Fig. 1: Influence Model



We are not heading for a new stocktaking of economic competence in general but for a scoring of the ability to take up the outlined position of an observer. To this purpose traditional tests are not enough. Usually these are literacy-tests assessing a fundamental declarative knowledge within a domain. Conceptual knowledge is only partly tapped. Apart from that they are created to measure competence in a general sense, but we are focussing on specific dimensions, concerning contents of economic knowledge as well as dimensions of competence.

Nevertheless, the TEL with its concentration on textbook-knowledge of economics is relevant. It is proved valid as a measuring tool. It consists of items assigned to four content areas: basics, micro-economics, macro-economics and international relations. The items measure economic knowledge on five levels of complexity within the Taxonomy of Educational Objectives of BLOOM (Beck/Krumm 1994). Even if the test proved successful in certain methodological aspects there remain inconsistencies with regard to the levels of performance: the objective 'transfer' shows better scores than 'understanding', which is conceived a pre-condition of 'transfer' and thus assumed easier from the theoretical perspective (Müller et al. 2007). We therefore use in our study only a choice of items relevant to our aims and add another way of measuring economic competence. The selection of items (observer's position; dimensions of DeGöB) is possible because it is guided thematically.

The instrument of concept-mapping will complete our test of economic knowledge. It is relatively new in the pedagogical context and was – as far as we know – never used as an

assessment tool to test economic competence in the context of general education.⁵ The tool includes a task to elicit structured knowledge, a response format and a scoring system (Ruiz Primo 2000: 4). There exist different techniques to carry out the tests. In our framework low-directed techniques requiring knowledge on a higher level are of primary interest. Firstly, students are asked to construct a map of concepts of the knowledge-domain. The concepts are represented by domain-specific terms. Finally a graph with nodes (concepts) and captioned linking lines emerges. It is a visual representation of meaningful relationships (Iuli/Himangshu 2006: 2). The titles on the lines explain the relationship between pairs of concepts. Interviews of experts lead to a blueprint of the concept-map. This expert-map with relevant concepts and linking lines is used as a benchmark to measure performance. This benchmark is a crucial difference to the concept-mapping in social psychology to study social representations (Zappalà 2001). To measure students' performance by underlying expert-maps leads to a so-called convergence score, representing "the proportion of accurate propositions in the student's map out of the total possible valid propositions in the criterion map (expert's map)." (Ruiz Primo 2000: 6) Software tools for the analysis are available (Weber 2000). RUIZ PRIMO and co-authors proved in a whole string of validation-studies the suitability of concept-maps as assessment tools. A comparison of different test-techniques resulted in findings of which two are crucial for our purposes: (1) "The convergence score ... seems to better reflect systematic differences in students' connected understanding and it is the most effort and time efficient indicator." (2) "Construct-a-map with assessor-generated concepts is the technique that most accurately reflects student differences on connected understanding." (Ruiz Primo 2000: 13)

The independent variable in our influence model 'economic competence' will therefore be tapped by two kinds of analysis. The dependent variable 'attitudes' could be measured on the basis of existing surveys (i.e. Soper/Walstad 1983). But, we will not inquire attitudes to market economy in general. Instead we refer on typically market-induced trajectories in the European Union. The items will be constructed as Likert-scales. This enables us to perform a quantitative analysis.

There will be no deeper inquiry into the reasons of cultural stamped attitudes. Necessary is the statistic description of trans-cultural differences and a measurement of the influence-strength concerning value judgements on market economy, especially in comparison to that of

⁵ Concept-maps as assessment tools were already used in the field of vocational education to tap knowledge about business administration, i.e. by Weber 1994.

economic competence. Insofar, a parallel transnational study including identical items is sufficient to elicit cultural differences. Gender and socio-economic effects will also be inquired in a traditional way.

We also assume a connection between educational framing conditions and the degree of economic competence. If this will be proved, we are able to generate proposals on education policy in respect of school-curricula. Therefore this framework has to be analysed. We will analyse the relative value of economic contents in the national curricula and test the correlation between these results and the level of economic competence. Our test will be based on a criteria-catalogue deduced from the expert-maps generated before (see above). The results of the content-analysis will be transferred from verbal description into ordinal-scaled scores. These scores represent the degree of fulfilling the pre-defined objectives and allow a correlation-analysis.

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