

## **THE ROLE OF UNIVERSITIES IN SOCIAL TRANSFORMATION: CASE OF ESTONIA**

### **INTRODUCTION**

The desire to understand the role of university in society has inspired research in social scientists of for a long time. Studies show that university has a number of political, economic and social functions. Similarly to the lower level educational establishments, universities (are believed to) enhance the functioning of nation state, make important contribution to the economic growth and reproduce the existing social structure and inequalities. To achieve these ends, they use both public as well as private funds, curriculum, authority structures, teachers and peer networks. They socialize students and transmit knowledge, skills, culture and values. But unlike their "junior brothers" universities have an additional responsibility: they (are expected to) offer answers and solutions to multiple problems that societies face by producing new and applying existing knowledge.

Despite the interest of philosophers, political scientists<sup>1</sup>, economists<sup>2</sup>, sociologist<sup>3</sup>, anthropologists<sup>4</sup> and other social

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<sup>1</sup> Philosophers and political scientists' elaborations on the social role of the university have, to a large extent, remained normative: they claim that university ought to have an end in itself and it serves society best, if left alone to search for truth. For close study of this argument see Newman, Gadamar, Georg, Kerr, Oakeshott, Pelikan, Richter, and Zananiecki.

<sup>2</sup> Economists dealing with economic development have invested especially lot of energy to understand the relationship between education and economic growth. Since 1960 when Theodore Schultz, the recipient of Nobel Prize at the later date, first wrote about investing into people, and Gary Becker published first scientific publications about human capital theory, a whole generation of economists has tried to document the relationship between education and economic development. Despite of the academic discussion that has lasted for decades and the resent political statement the World Bank that human capital theory has provided statistical evidence and earned widespread acceptance (World Bank 1999: 6) there are many scholars who are not convinced or claim that the investments into higher education have, contrary to expectations, low social return. To get an overview of the controversies still existent, see Aghion & Howitt (1998), Rubinson & Browne (1994), Kroos (2001) and the sources quoted there in. See also Pritchett (2001), who offers an explanation why the national returns on education differ. To get an overview about the returns on (higher) education see Psacharopoulos (1981), (1985), and Pritchett (2001). To get an overview of the Sub-Saharan African experience to develop through large investments into education see Freeman and Lindauer (1999), Kroos (2001) and World Bank (1994). To get an overview of how Asian countries that have developed despite of the low level and investment into education see Ashton and Sung (1997), Booth (1999), Elkan (1995), Soon & Tan (1993) and Young (1994).

<sup>3</sup> The contribution that sociology has made to understanding of the role of university in society is extensive. It has been developed within the theoretical frameworks of technical-functional theory, institutional theory, status-conflict and class theories of stratification. To get an overview of these theories and the empirical evidence see Rubinson and Browne 1994. Furthermore, resent enthusiasm of knowledge and information society has also given a boost to innovation studies that try to disclose the benefits of university-industry relationship. For a literature overview see Scott et al. 2001.

<sup>4</sup> Anthropologists who show interest in innovation diffusion, have developed the center-periphery model further. As an outcome, three hypothesizes have been generated. The first among these has been termed Johnny Appleseed

scientists, the role of universities in post-communist social transformation has attracted very little attention. On the one hand, the literature on sovietology says little about the role(s) that institutions of higher learning (could have) played in bringing about the social transformation. On the other hand, the key documents that supplied the blueprints for post-communist transformation stress the importance of education for long-term sustainable growth<sup>5</sup> but leave the contribution of university towards the build-up of the new regime ambiguous.

In order to fill the gap, a case study of the role of university in Estonian social transformation is undertaken. But in addition to the analysis of what was the role of Estonian universities in removing the old and what has been their role in building the new political and socio-economic system, this paper would like to make a contribution to higher education policy. In other words, it is anticipated that this research should be prosaic, not just optimistic or cynical<sup>6</sup>. Therefore, the aim is not limited to the desire to demonstrate whether the Estonian institutions of higher learning have been transformative or reproductive. Rather, it would like to suggest what changes in the national higher education (policy) are desirable in order to increase the positive role of universities in social transformation.

To clarify the role of (Estonian) universities in the breakdown of the soviet regime, the paper first describes the soviet higher education policy and ideology, and then offers an analysis of the role of universities through eight different theories of collapse of communism. As the argument of this part of the paper develops, it is demonstrated that the major contribution of the system of soviet higher

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model, which describes the change agent as a kind of „evangelist“ who roams his territory spreading a message. The second one has been termed the magnet model, in which the best provincial minds are attracted to the cultural center to learn and carry the innovation later to home. The third hypothesis which has been termed the proliferation of centers model, describes a situation where peripheral sites become sub-centers with more remote peripheries of their own. For an overview see Harper 1993: 125-27.

<sup>5</sup> In fact, one can find the policy recommendations and stress on the importance of channelling funds into education from documents such as the Washington Consensus from 1990 (Williamson 11) Post Washington Consensus from 1998 (Kolodko) as well as EBRD's investment promotion policies from 1997 (Buiter, Lago, Stern 47).

<sup>6</sup> The terms optimistic, cynical and prosaic are used as defined by Rubinson and Browne. They summarize the chronology of sociological study of education and economy as follows:

1. Optimistic period - "built on functional theory in sociology and human capital theory in economics. Education was simply assumed to increase the productivity of national economies through increasing the productivity of individuals";
2. Cynical period - "based on stratification theories from several disciplines. This research concluded that education has little, if any, economic benefits";
3. Prosaic period - period "in which the extreme claims of both periods are being reexamined through a change in the way theory and research are approaching this same basic issue..." (Rubinson and Browne 1994: 581).

education towards the collapse of Soviet Union (SU) was its inability to legitimate the rule. The major contribution of Estonian institutions of higher learning towards the restoration of independence in Estonia was the reproduction of local elite and preservation of national culture.

To clarify the role of Estonian institutions of higher learning in the efforts to build new political and socio-economic structures, the paper first describes the post 1991 Estonian higher education policy and then the analysis of the role of university in Estonian post-communist transition follows. It is argued that due to socialist legacy of underdeveloped social sciences and absence of well thought through higher education policy, the positive role of universities in Estonian transition has been smaller than anticipated.

## SOVIET (ESTONIA) HIGHER EDUCATION POLICY AND IDEOLOGY

It appears that the structure of Soviet (higher) education system was set up to achieve a mix of individual and social ends. The institutional differentiation, models of assessment, curriculum content and teaching methods were designed to support the creation of *Homo Sovieticus* and economic progress. In order to understand the function of the Soviet system of higher education and what was it to "produce" the analytical method of Salter and Tapper will be used. More particularly, three questions will be asked about the components and means of the Soviet higher education policy:

- (i) What were the desired types of individual (educational product)?
- (ii) What was the desired social order?
- (iii) What was the structure of higher education like?

(i) The desired types of soviet individual educational product are not straightforward. On the one hand, it was declared in accordance with the Marxist vision<sup>7</sup> that the desired types of individual educational product should allow one to take full advantage of individual's many-sided personalities. In this context it was stated that the goal of the soviet educational system is to train harmonically developed and active citizens with integrity. On the other hand, it has been argued, that in reality the system reduced education to the training of workforce and forming of soviet mentality and obedience (Eesti Entsüklopeedia 1994: 11)<sup>8</sup> to an extent that the total control of a person's thoughts and feelings, memory and therefore also of the national history was to be taken (Laar 2002: 9).

(ii) To understand what the desired social order in the SU was, one has to take a note of the events in the beginning of

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<sup>7</sup> Marx seems to envision that revolution will create not just a new type of society but also a Renaissance type of person to inhabit it. For instance, he says in *German Ideology* that "[i]n communist society, where nobody has one exclusive sphere of activity but each can become accomplished in any branch he wishes, society regulates the general production and thus makes it possible for me to do one thing today and another tomorrow, to hunt in the morning, fish in the afternoon, rear cattle in the evening, criticize after dinner, just as I please, without ever becoming hunter, fisherman, shepherd or critic" (Marx 1973: 53).

<sup>8</sup> Andrei Rogachevskii summarises the socialist paradox as follows. "THE WELL-DESCRIBED PHENOMENON of *HOMO SOVIETICUS* (a 'new' human type produced by the Soviet system) can be quite adequately illustrated by two contradictory images. On the one hand, *Homo Sovieticus* is represented by the (often leather-clad) macho Bolshevik superhero of the Socialist Realist canon. On the other, *Homo Sovieticus* is seen as a very ordinary, transparent, malleable and submissive human being with rather primitive desires and precious few exceptional features. Despite the obvious distance between the official propaganda concept (the former) and its true motivation (i.e. breeding the latter), the superhero and the common Soviet man share at least one trait: neither seems to be much of a reader. The burden of excessive book learning would impair the unswerving resoluteness of the action hero who is most guided by his revolutionary instincts, whereas for the common man, whose existence is often termed 'communal', reading appears to be too much of an individual pursuit. And yet Aleksandr Zinov'ev, arguably the most knowledgeable expert on the subject, defines *Homo Sovieticus* as an 'educated man'" (Rogachevskii 2002: 975).

20<sup>th</sup> century and the socialist development policy that emerged out of these. After the failure of socialist revolutions to take place in Western Europe, Lenin's bitterly experiments with War Communism, and the rebuttal of Trotsky's model of permanent revolution, the policy of "socialism in one country" became the dominant national strategy to build socialism and reach communism. Behind this policy was an idea that socialism could (still) be built in Russia through tight control over almost all economic activities and under the political leadership of Communist Party. The history of SU shows that this turn away from NEP<sup>9</sup> at the end of 1920s had very strong and lasting implications for the (desired) soviet social order.

Based on the set goals to industrialise and modernise - to catch-up and suppress<sup>10</sup> the desired social order of the SU could be characterised as being the sum total of rational, technocratic and productive behaviour of loyal soviet citizens. Therefore, the development of an egalitarian society became far less important than development of productive capacity and technological modernisation. Although the Party continuously stressed the social equality - social structure characterised by social harmony and peace between classes - Sandle's multisectoral analysis of the soviet public policy shows that there was a sift-away from egalitarianism in the public policy of soviet socialism. Achieving the set targets of the plan and therefore distributing to "each according to his ability", became more important than distributing to "each according to his needs".

In contradiction to the above described, it has been argued by Estonian social scientists that industrialisation and collectivisation were just a facade to cover up the actual aim of the communist regime in Estonia - to make people to forget the past and the fact that a different social order to that of communist reality was possible. Therefore, Estonia was to be colonised and russified<sup>11</sup>, civic society and free intellectual

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<sup>9</sup> NEP stands for New Economic Policy, it was based on limited market relations (rather than rigid central controls) in trade and industry and it was implemented by Lenin after War Communism in Soviet Union in 1920s.

<sup>10</sup> Stalin said in 1929 that "We are advancing full steam ahead along the path of industrialisation - to socialism, leaving behind the age-old "Russian" backwardness. We are becoming a country of metal, a country of automobiles, a country of tractors. And when we have put the SU on an automobile, and the muzhik on a tractor, let the worthy capitalists, who boast so much of their "civilisation", try to overtake us. We shall yet see which countries may then be classified as backward and which as advanced" (Stalin qt. in Sandle 1999: 225).

<sup>11</sup> There seems to be a consensus among well known Estonian social scientist that russification was in one way or the other the aim of soviet state policy in Estonia. While some (such as Laane, Ruutsoo and Haav) state that communist state wanted to abolish nations; others (such as Hallik and Vseiov 1995: 14, and Kirch 1997: 24) claim that colonisation was the aim, and yet others (e.g. Titma and Saar) argue that education was the primary mechanism through which this ultimate aim of russification was to be achieved (Titma and Saar 1995: 55).

life destroyed, education and culture<sup>12</sup> placed under the control of Communist Party. For instance, Ruutsoo argues that [t]he "ideal model" of Soviet state-socialism was designed to promote the creation of a homogenous society and the Soviet nation. The Stalinist modernisation project intended to produce a unitary homogenous, absolutely transparent Russian-speaking, mono-cultural, industrial and atheist society, with no place left to minorities nor to any non-Soviet esthetical, moral, etc., values. In this concept, 'national minorities' such as the Estonians were "temporary", i.e. they were extra-systematic elements by definition. The mature Soviet society was planned to end all such extra-organic elements, i.e. the anti-systematic, non-systemic and quasi-systematic qualities of society (Ruutsoo 2002: 98-99).

Yet, it is difficult to agree with Estonian social scientists that the primary aim of soviet policy was to abolish the nations and that the "political and ideological goals outweighed economic considerations" as Hallik and Vseviov state (Hallik and Vseviov 1995: 14). It may look like this now when the socialist economic model has been proved to be inferior to capitalist one. Yet, the fact that soviet system made large investments into the systems of (higher) education and academy of sciences or that it was possible to acquire higher education in the native language were hardly a coincidence. It does not seem possible in the context of soviet centralised planning, policies of communism in one country and "catching up and suppressing". If indeed, the aim of soviet policy was to colonise it would have been easier and less costly to distract all the resources from Estonia without establishing large industrial enterprises and complexes, increasing the number of institutions of higher education and academy of sciences. In order to russify, it would have been logical to change the language of instruction from Estonian into Russian in all levels of education but definitely at the level of higher learning<sup>13</sup>.

In other words, for Soviets the elimination of nations other than the Russian was not an end in itself. Castells who has compared the French and the Soviet Revolution, says that both of them were (aiming to become) a triumph of reason. Yet, "... France is probably the only country in the world that really exterminated all identities other than the French identity ..." (Castells 2001: 117). Contrary to the understanding of the

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<sup>12</sup> Liivrand argues that the occupational power does not accept anything that puts its "imported" regime into question. Therefore, Trotsky's statement that the role of art in revolution is defined as a relative freedom under observant revolutionary censorship, describes well the freedom of expression that was allowed in Estonian art immediately after the Second World War (Liivrand 1999: 111).

<sup>13</sup> It must be mentioned that there were efforts to increase the number of people who would be able to speak Russian. For instance, the Council of Ministers of USSR passed the "classified" regulation nr. 835 on October 13, 1978 that set the policy aim to improve the learning and teaching of Russian language in the soviet republics. The actual measures to be taken were further specified in the Activity Plan as well as in the separate Degree of the Central Committee of the Estonian Communist Party of December 22, 1978. Yet, it must also be said that none of these documents declared or suggested to change the language of instruction to Russian. See Kiin et. al. 1990: 167 - 178 for the Estonian translations of the mentioned documents.

above mentioned Estonian social scientists, Soviet project was intellectually more challenging than the French one. That is, soviet public policy did not try to exterminate identities by force, rather than

eliminating the irrational remnants, the vestiges of history, and rebuilding everything on the basis of a 'new man', who would be the avant-garde of the New World. ... The matrix notion was that the Soviet people would emerge as a new identity through the work of education (Castells 2001: 118 - 9).

Based on above observations, one can sum up that the Stalinist legitimisation policy of "socialism in one country" set the course of soviet policy making for decades to come. As the legitimisation through socialist economic progress became more important than achieving political ends such as russification, equality and upward social mobility, the goal of state higher education policy was to produce workforce that was loyal, rational, technocratic and productive.

(iii) Talking about educational structure one has to take a closer look at the institutional differentiation, models of assessment, curriculum content and teaching methods.

*Institutional differentiation.* There were three types of institutions of higher learning in the SU. All of these types - universities, polytechnics, and specialised institutions of higher learning - were represented in Estonia<sup>14</sup>. Although many features of the three were similar if not uniform (such as ownership<sup>15</sup>, the length of undergraduate studies<sup>16</sup>, the type of diploma received upon graduating); number of differences remained among them<sup>17</sup>.

Polytechnics can be regarded as institutions of higher learning that were most directly involved with the realisation of socialist dream. They were to prepare engineers and economists (Schmidt 1971: 135) by giving basic knowledge in the disciplines related to natural science and technology about production, technology, production technology as well as organization of work (Eesti Enstsüklopeedia 1994: 389).

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<sup>14</sup> See Appendix 1.

<sup>15</sup> Private provision of (higher) education (either religious or not-religious, for-profit or not-for-profit) was not allowed in SU.

<sup>16</sup> With few exceptions in majors like medical studies, the nominal length of the studies to obtain the higher education diploma was four years and ten months (Tomusk 2000: 135).

<sup>17</sup> More research is needed to disclose if there were differences between the types of institutions of higher learning in Estonia. The data provided in Appendix 1 allows one to speculate that probably there were differences. On the one hand, University of Tartu had relatively more academic staff members with advanced academic degrees than other institutions of higher learning. While it may be claimed that advanced academic degrees are less important at the Estonian Institute of Art and Estonian Academy of Music, it is difficult to say the same about Tallinn Technical Univ., Tallinn Pedagogical Univ. and Estonian Agricultural Univ. On the other hand, Univ. of Tartu stands out also as an institution that had relatively most members of the academic staff without an advanced degree.

There was just one polytechnic institute in Estonia: Tallinn Polytechnic Institute. Reflecting the described policy aims to industrialise, modernise, catch and suppress, it is logical that this school saw its student body being increased most ravidly<sup>18</sup> and became the largest institution of higher learning in Soviet Estonia.

Universities were to produce specialists in humanities, natural and exact sciences as well as in medicine and agriculture in the soviet system of higher education (Schmidt 1971: 135). The departmental structure of the only university type of institution of higher learning in Estonia - the State University of Tartu - reflected this policy aim quite clearly.<sup>19</sup>

Yet, the fact that students were allowed to choose between pedagogical specialisation and theoretical / applied science program at six out of nine departments at the State Univ. of Tartu shows that universities were engaged in addition to the preparation of specialist in training of secondary school teachers. (The only departments that one could not get a specialization in pedagogy were the departments that were giving education in professional fields: medicine, law, and economics).

Specialised institutions were to prepare specialists for specific areas of the soviet economy and culture. In Estonia there were the following specialised institutions:

1. Tallinn Pedagogical Institute
2. Estonian Institute of Agriculture
3. Estonian SR State Institute of Culture
4. Tallinn State Conservatory

Although it may seem that academics regarded universities as the leading institutions in the Soviet higher education system<sup>20</sup>, there is little evidence to show that in Estonia students and their parents regarded the

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<sup>18</sup> The student body of the Tallinn Polytechnic Institute increased more than eight times, considerably more than in any other institution of higher learning, between 1940 and 1969 (Schmidt 1971: 141).

<sup>19</sup> By 1974 the State Univ. of Tartu had the following departments in place:

1. Department of history
2. Department of mathematics
3. Department of physics and chemistry
4. Department of biology and geography
5. Department of medicine
6. Department of economics
7. Department of physical culture
8. Law department
9. Language department

Since 1951 the preparation of agricultural specialist continued at Estonian Academy of Agriculture as the departments of agriculture, veterinary and forestry departed from the State Univ. of Tartu.

<sup>20</sup> One can find support to such claims from the statements of some scholars (see e.g. Schmidt 1971: 134) as well as from the statistics that reflect the composition of academic personnel at various Estonian institutions of higher learning during the Soviet era.



university equally highly. For instance, the analysis of the geographical origin of the students shows that high school graduates from Tallinn and its surrounding areas continued in 81.3% of the cases their education in Tallinn whereas high school graduates from Tartu continued in 74.6% of the cases their education in Tartu (Schmidt 1971: 151).

In short, soviet institutions of higher learning differentiated from one another primarily by majors that they offered. Other aspects that affected the identity of the institutions of higher learning in Estonia during the soviet era included centrally determined quotas and the official propaganda. That is, in the effort to ensure steady supply of professionals such as engineers that were believed to be the most critical for realisation of the state policy of forced industrialisation, quotas and official propaganda influenced the quality and gender composition of students.

The composition of student body, in turn, was affected by two additional factors. First, relatively well paid jobs in industrial and agricultural sectors supported male students to discontinue their education at secondary school and to acquire a "proper" occupation at vocational school. Yet, as the vocational education did not allow in reality one to continue his or her education at the institutions of higher learning (Hellemäe *et. al.* 2000: 70 -71)<sup>21</sup>, situation emerged where Tallinn Polytechnic Institute and Estonian Academy of Agriculture, institutions that were operating in the areas most critical for the achievement of state policy, were forced to accept almost anybody who had decided to apply for admission.<sup>22</sup>

Second, despite of the official propaganda that tried to present males and females as equal, there was little gender equality in the ESSR system of higher education. More particularly, Tallinn Polytechnic Institute and Estonian Academy of Agriculture had majority of the student body made up of males whereas at the Tallinn

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<sup>21</sup> More specifically, the longitudinal research of over 30 years by Helemäe *et la* allows to conclude that despite all, one had the highest chances to enter an institution of higher learning if s/he graduated from the specialised class at secondary school and least chances if s/he graduated from secondary vocational school. The type of secondary school that the young person went was, in turn, determined by a number of socio-economic factors such as: type of primary school graduated, size of the location lived, grades on the primary school diploma, the level of mothers' education and fathers' social position (including education and occupation) (Helemäe *et la* 2000: 68-76).

<sup>22</sup> Tallinn Polytechnic Institute accepted 71.5 and Estonian Academy of Agriculture 80.7 percent of the applicants who took all the entrance examinations (Schmidt 1971: 148 -51).

Pedagogical Institute and State University of Tartu<sup>23</sup> the situation was reverse. The total gender distribution at all Estonian institutions of higher learning was clearly for the advantage of female students during the Soviet era.<sup>24</sup>

Institution of higher learning	Percentage of female students
Tallinn Polytechnic Institute	33.9
Estonian Academy of Agriculture	38.2
State University of Tartu	69.1
Tallinn Pedagogical Institute	80.8

It has to be mentioned that despite the good possibilities that existed for females to acquire higher education as well as the fact the admission to Estonian institutions of higher learning was the least competitive within the SU (Balzer 1992: 166), post-secondary education sector enforced, rather than tried to eliminate, the differences that did exist among social-classes in ESSR. University education was almost a privilege of the offspring of urbanized professionals in soviet era Estonia: The access to higher education was determined by family's socio-economic background and the type of secondary education received.<sup>25</sup>

- *Models of assessment.* Soviet higher education system used five point grading system<sup>26</sup> in the form of preliminary assessments and examinations that controlled students' academic progress typically only few times (if not just once) per semester to achieve a number of policy aims. First, the fact that feedback was given to students on their academic progress, could be interpreted as the regime's desire to push students to study harder so that the social return on the public investment into them would be higher. Second, the fact that there was little privacy when it came to students' academic progress<sup>27</sup> suggest that in addition to socio-economic benefits that the better academic results were to bring, the system exercised quite a bit of group pressure and conformity. Third, the fact that the examinations were

<sup>23</sup> The abbreviation of the State University of Tartu in Estonian TRÜ was informally understood as Tütarlaste Riiklik Ülalpidamine which means State Support of Females (Vilgats 2001: 201).

<sup>24</sup> The gender balance at Estonian institutions of higher learning was for the advantage of female students 35-65 in 1960, 33-67 in 1963 and 39-61 in 1966 (Schmidt 1971: 152).

<sup>25</sup> For further details see Saar 1997, Titma and Saar 1995.

<sup>26</sup> In practice just four of them were used: 5 - excellent, 4 - good, 3 - satisfactory, 2 - poor i.e. failure.

<sup>27</sup> It was common practise to display all the results of exams openly on the walls of the institutions of higher learning, so that students' academic progress became very public to the fellow students.

often oral and used the "ticket system" that tests just a minor part of the actual material that the student was supposed to know, raises questions about objectivity and suggests that the actual aim was to reinforce a social order in which it was clear who was the master and who was the obedient<sup>28</sup>, and where everything did not depend how hard one worked rather than how well s/he got along with his or her superior.

- *Curriculum content.* To what extent the inequalities among institutions of higher learning were minimised through standardisation and uniformity throughout the SU, is an open question.

On the one hand, it has been argued by Tomusk that the curriculum content was highly uniform throughout the SU. There was not (supposed to be) a difference in the content of studies wherever one followed a program (*spetsialnost*) within the soviet higher education system (Tomusk 2000: 134). Uniformity was ensured and creation of new ideas blocked by teachers' lack of academic freedom as well as overly specialised and very narrowly focused curriculum context. Regime's desire to implant ideologically acceptable understanding of political, social and economic issues to the minds of future soviet elite was brought to students through subjects that were meant for brainwashing. These included classes on the history (of the Communist Party of SU), (Communist) philosophy, political-economy, scientific communism and military training (also for female students).

On the other hand, analysis of soviet secondary education by Titma and Saar shows that the political aim of equal and uniform education was hardly realised in all republics, regions and social strata (Titma and Saar 1995: 55)<sup>29</sup>. Although their study is limited to secondary education, there is evidence that the situation was not much different in soviet higher education. For instance, Lepik says that teaching of supplementary subjects that were not part of official curricular was organised on voluntary basis at Estonian institutions of higher learning much before it happened anywhere else in SU.<sup>30</sup>

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<sup>28</sup> As Ruutsoo claims, the relationship between students and their teachers at universities was not \_\_\_\_\_ (Ruutsoo 2002:\_\_\_).

<sup>29</sup> Titma and Saar conclude that "real historical differences between regions influenced the structure of their educational institutions more than ideology. Formally, the ministry of education provided similar resources to the republics, but in reality schools in Central Asia or the Caucasus were very different from those in Moscow or the Baltic Republics. ... [Because of the scarcity resources l]ess developed regions were just neglected, and most of the achievements in those republics were made only on paper" (Titma and Saar 1995: 55).

<sup>30</sup> Lepik says that teaching of supplementary subjects that lead to a diploma, was to compensate the narrow vocationalism of curriculum and slow-down the process of russification. First, there was an understanding at the Tartu State University that finding a job is difficult for the university graduates that were trained in narrow fields. Second, there were a number

Tartu State University pioneered with it in 1962, Tallinn Polytechnic Institute followed in 1963, Estonian Agricultural Academy in 1964 while the similar faculty was created in one of the leading Soviet universities - Moscow State University - only in 1980 (Lepik 1998a: 72-73).

- *Teaching methods.* Teaching was mostly based on lecturing, characterised by lack or total absence of discussion, methods of case study and group work. Learning was based on memorizing rather than problem solving. Due to the high number of contact hours and lack of library recourses (including but not limited to the lack of West-European and North-American academic literature), lectures became "middlemen of ideas"<sup>31</sup> and students' individual work with academic literature was limited. To compensate also for the lack of textbooks and other academic literature middlemen in ideas were lecturing (read giving a *dictant*) which resulted in an "academic cycle" of four months of notes taking (i.e. production of study material) and one month of real studding<sup>32</sup>.

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of subjects, especially connected to the local culture (e.g. instructors of folk dance and home culture), that were not taught anywhere. (Lepik 1998a: 72).

<sup>31</sup> Using Hayek I define Estonian academics as "the professional second-hand dealers in ideas". That is, to qualify for the academic position in Estonia one needs to possess the ability to talk and write on wide range of subjects, and have the position that allows him or her to become acquainted with new ideas sooner than those addressed (Kroos 2000: 9).

<sup>32</sup> One can find a remarkable similarity with the situation in the underdeveloped countries in 1960s. E.g. consider the following lines from Shoutheast Asia: [U]niversity education in non-professional courses in all these countries has degenerated into giving lectures to huge overcrowded classes with hundreds of students, lectures being frequently given at 'dictation speed' so that students can get complete lecture notes which they learn by heart to be reproduced in the examinations. The overworked professors can do little else and, owing to shortages of textbooks and to students' difficulties in understanding them, few students read anything beyond their lecture notes. There is very little outside reading for general education, and the meagrely stocked libraries are used merely as places where students can memorize their lecture notes. The professional courses, such as medicine and engineering, still try to impose a restrictive selection on their numbers, but this seems to be losing battle and their standards also have suffered in varying degrees from the pressure on limited laboratory facilities" (Myint, 1971: 228).

## REMOVING THE OLD

One thing is certain--in August 1991 soviet rule come to an end in Estonia. What is less clear is why it did and what role, if any, did the universities play in it.

Almost without an exception, scholars dealing with the Soviet system failed to diagnose the state of affairs correctly and consequently could not anticipate the possibility for major social transformation in Eastern and Central Europe and Former Soviet Union (ECE/FSU) before it actually started. Once started, world has seen a flow of theories trying to explain why the communist regime fell.

Among the theories that try to explain the collapse of Soviet regime, one can basically differentiate between two types of theories. First category incorporates theories that see the origin of Soviet downfall in its essence, while the second one hosts theories that see a particular aspect of the regime (such as operations, institutions or personalities) as major contributors to the collapse of the system (Dallin 1992).

The "essentialists" argue that the ultimate cause of the communist collapse had its roots in the origin or design of the system. Among these, one should distinguish between the Austrian school of economics' *knowledge problem* argument<sup>33</sup>, and those that see the fundamental elements of soviet society--Marxist-Leninist ideology and the Communist party with its strong totalitarian character--as essentially illegitimate, unchangeable and unreformable<sup>34</sup>.

Theories, according to which, certain **operations** of soviet system lead to the collapse of the regime, are numerous and not easy to group. Yet, these theories have one thing in common--the understanding that the soviet regime made some policy choices that in one or the other way eventually lead to the collapse of the system. This body of knowledge includes the following theories: soviet failure to compete with the west<sup>35</sup>, imperial overstretch<sup>36</sup>, failure of perestroika<sup>37</sup> and

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<sup>33</sup> For the original argument of the impossibility to carry out rational economic calculation under socialism and therefore to have a functioning economy see Mises. For the overview of the socialist calculation debate that this claim caused, see Lavoie as well as Balcerowicz (1995: 35-50).

<sup>34</sup> On the totalitarian character of socialism see Dallin (1992); Haav and Ruutsoo (1990) and sources quoted therein.

<sup>35</sup> For more general impact of the international environment of the collapse of communism see Bialer. For the short overview of the US foreign policy that lead to the SU loss of Cold War see Laar et. la. 1996: 107-111.

<sup>36</sup> Holmes uses Paul Kennedy's framework of the collapse of empires to argue that one could understand the breakdown of communism as SU's ambition to influence and to be involved in too many countries. I.e. the soviet imperialism was carried out at the expense of soviet economy and people, which by the 1980s was detrimental for the regime. For details see Holmes 1997: 33-35.

<sup>37</sup> It is common to refer to perestroika and glasnost as the cause of the collapse of communism. See, for instance,

economic policy<sup>38</sup>, comparative theories of revolution<sup>39</sup>, theories of modernization<sup>40</sup> and modernity<sup>41</sup>, Marxist corrective as well as the extensive exploitation of nature (or attempts to do so)<sup>42</sup>.

The list of theories, according to which, certain **institutions** of soviet system lead to the collapse of the regime is less numerous. Understanding institutions as parts or a sum total of written and unwritten rules (culture) one can find arguments such as corruption<sup>43</sup>, the erosion of the ideological belief system (the legitimation crisis theory), Russian political culture<sup>44</sup> and unresolved Russian question as causes or explanatory variables of the collapse. While understanding an institution as an organization, one can find an argument claiming that the collapse of Communist Party of the Soviet Union (CPSU) ensured the collapse of the SU<sup>45</sup>.

Last but not least, there are theories, which would say that some **individuals or groups of individuals** played a key role in

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<sup>38</sup> Contrary to intuition, there are relatively few arguments in addition to the mentioned Austrian School, which would make a case that soviet system fell because of the economic reasons. Nevertheless Olson (1992), Easterly and Fisher (1994), and Maier (1997) have put forward such arguments. More particularly, Olson offers a rational choice explanation. He says that imbalance between the interest of the central government and that of the local subordinates lead to tacit collective action and diminishing growth rates. Easterly and Fisher show how low elasticity of substitution between capital and labour lead to diminishing returns to capital. Last but not least, Maier accounts the downfall of communism to the different soviet response to the changes in international economic environment (oil crisis, increased cost of capital and limits of Fordist mass production) as well as political environment (domestic redistribution and struggles for dominance in Third World). Maier says that while the flexibility of capitalism allowed it to restructure and reorient its priorities, the soviet regime tuned back to the principles that had guided the SU since 1930s.

<sup>39</sup> Holmes refers to a number of comparative theories of revolution. Yet, he draws special attention to the *theory of rising expectations* as "one of the more interesting propositions." According to this approach, revolutions happen because reforming government has raised expectations that it is unable or unwilling to keep. For details see Holmes 1997: 35-38.

<sup>40</sup> Theory of modernization says that history progresses in marked stages towards an end goal, and that there is some correlation between the country's socio-economic development and the type of political system. Among the many modernization scholars the works of Fukuyama, Brzezinski and Huntington are especially relevant for understanding the processes that culminated between 1989 and 1992.

<sup>41</sup> On the effects and specifics of dialectical materialism in SU see Graham (esp. 1993a: 99-103); for the argument how "the collapse of communism was a function of distorted modernity correcting itself" see sources quoted in Holmes 1997: 42.

<sup>42</sup> Aare (1999) claims that the break-up of the former Soviet Union started as a result of the Estonians reactions to Moscow's plans to establish the largest phosphorite mine of Europe in northern part of Estonia.

<sup>43</sup> For the overview of corruption argument see Bunce (1991), Perkin (1996) as well as the sources quoted in Dallin. Among the mentioned, Perkin shows especially vividly how corruption among other factors contributed towards the collapse of soviet system.

<sup>44</sup> See Tucker (1992) for the argument according to which *glasnost* has been historically a typical policy reaction to crisis situation in Russia. Furthermore, he adds that as the political culture is persistent, one cannot really talk about a system change or socio-economic formation.

<sup>45</sup> For instance, Remington (1992) stresses the CPSU key role in the collapse of SU.

the collapse of soviet regime. On the one hand, there are analysts, who stress the role played by politicians such as Gorbachev<sup>46</sup> and Reagan. On the other hand, there are theories, which argue that groups of individuals such as political dissidents and opposition<sup>47</sup>, intellectuals<sup>48</sup>, labour movement or the whole nations<sup>49</sup> brought about the regime change.

Without a doubt, these theories offer a major chance to improve our understanding of the role that universities (could have) played in bringing the Soviet regime to an end. Therefore, in the pages to follow selected theories of communist collapse will be further analysed<sup>50</sup>. It will be demonstrated that universities in Estonia (or any other part of the FSU for that matter) could hardly be classified as institutions that contributed to the fall of communism through questioning the essence of soviet regime. Rather than performing heroically, institutions of higher learning were set to contribute towards the success of soviet model. Ironically it was the failure of soviet higher education system to legitimate the soviet regime through economic progress that most apparently led to the collapse of SU. The most important contribution of the Estonian institutions of higher learning towards the regaining of independence was reproduction of Estonian elite and the conservation of the national culture.

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<sup>46</sup> This is the conclusion that Dallin arrives after exploring considerable number of other theories and arguments.

<sup>47</sup> See for instance Kiin (2000, pp. 135-145) for the stress of the key role played by opposition forces in restoration of Estonian independence.

<sup>48</sup> See Bozoki (1999) for the literature overview and representatives of third wave of *New Class* theories such as Eyal, Szelenyi and Townsley (1998) as well as the early versions of this theory by Konrad and Szelenyi (1979), Szelenyi (1986-87); Konrad and Szelenyi (1991).

<sup>49</sup> See Lauristin (1997) and sources quoted therein for the decisive role played by the Baltic nations in transforming, dissolving and destroying the SU. However, for clarity it should also be mentioned that Lauristin's argument builds on culture which in itself is a path-dependent argument.

<sup>50</sup> Yet, the elaboration on the large number of theoretical perspectives is not undertaken in order to use the retrospective position to look for the answer "who got it right?"<sup>50</sup> or which of the theories could explain more about the Soviet collapse. Hence, the following pages will not go into analysis of the merits and possible flaws in the theories of the collapse of communist regime.

### **Essentialists**

As mentioned, the essentialists claim that some fundamental elements of soviet system, either the economic or political/ideological, were essentially irrational or illegitimate. According to these analyses, the regime is unchangeable and unreformable unless some of the defining elements of the regime are given up.

In ideological/political sphere the claims of illegitimate Soviet rule were almost unprecedented in Estonia before the end of 1980s<sup>51</sup>. The only individuals that made such claims publicly within Estonia<sup>52</sup> were political dissidents<sup>53</sup>, who at the last stage of Soviet rule (1987) became especially active. More particularly, they formed a special organisation called MRP-AEG to disclose the secret protocol of Molotov-Ribbentrop Pact<sup>54</sup>. Even though the organization was small in number<sup>55</sup>, it played the card of illegitimate Soviet rule very successfully. The issues raised by the organisation on the public meeting on August 23, 1987 "openly challenged the legitimacy of Soviet occupation in the Baltic States" (Titma 1997: 61) and, according to some commentators like Laar *et. al.*, later inspired Estonian politicians to use the unlawful incorporation of Estonia into USSR as the legal basis of restoration of Estonian independence (Laar *et. al.* 1996: 186).

Two points have to be made in the context of present discussion. First, the group of political dissidents included no individuals from universities or academy of sciences. Second, although the landmark demonstration in Hirvepark created immediately considerable discussion in the press, academics made no public statements in defence of the political dissidents or the historic truth<sup>56</sup>.

In the sphere of economics, Estonian academics' involvement seems equally inactive. The reviews of *socialist calculation debate* show that no Estonian or Soviet economist (whether connected to any of the institutions of higher learning or not) contributed to the scholarly debate at either side<sup>57</sup>. One could of course react and argue that Soviet/Estonian economists could not make their contribution due to the ideological control. Partly it is true, as the availability of Western or even East-European scholarly literature was restricted. But it must be stressed that it could only be

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<sup>51</sup> To the best of my knowledge, Haav and Rootsoo published the first book, which made such claims only in 1990.

<sup>52</sup> Estonian expatriates abroad, of course, made statements in this vain all along.

<sup>53</sup> For the overview of resistance movement against illegitimate soviet regime in Estonia see Niitsoo as well as Laar *et. al.* pp. 51-80.

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<sup>55</sup> The MRP-AEG included eight individuals: Heiki Ahonen, Ilse Heinsalu, Mati Kiirend, Jan Kõrb, Tiit Madisson, Jüri Mikk and Lagle Parek.

<sup>56</sup> This statement is made on the basis of the historical overview, including press digest made by Laar *et. al.* 1996: 173-187.

<sup>57</sup> The "anti-socialist" Austrian School included Ludwig von Mises, Boris Brutzkus and Friedrich A Hayek; while the opposite side included Fred A. Taylor, H.D. Kickinson, Oskar Lange, Joseph Schumpeter and Saurice Dobb.



partly true. As Sutela and Mau have pointed out, Soviet regime exercised only very little censorship and ideological control over academic writing in economics<sup>58</sup>. The fact that all publishing restrictions were lifted during the course of glasnost did not bring out noticeable number of previously suppressed manuscripts (Sutela and Mau 1998: 37) confirms the point and suggests that there should have been either some deeper organizational, institutional or qualitative problems in the Soviet (Estonian) system of higher education and/or research.

### ***The Marxist Corrective***

Holmes coins the argument of "bureaucratic state capitalism" by Alex Callinicos as the Marxist corrective. According to this line of reasoning,

the communist elites may not have formally owned the means of production, but in that they *controlled* them they occupied a class position vis-à-vis the working class that was essentially similar to that between a regular bourgeoisie and proletariat. As the elites (particularly the state functionaries) realized that their distorted brand of capitalism was less efficient than regular capitalism - which was becoming ever more global and powerful - they concluded they would have to normalize economically (that is, join the mainstream) (Holmes 1997: 32).

One could extend the reasoning to the academic elite. Similarly to the Callinicos state bureaucrats, Soviet economists went, according to Sutela and Mau through an evolutionary process starting from interpretation of Marxism-Leninism as a single factory in 1930s to trying to solve the problem of optimal planning in 1950 and 60s. As the possibilities to actually implement radically rational economic planning turned out to be unrealistic due to the lack of incentives and information, proposals suggesting a goal-oriented and dual-track planning emerged in 1970s. These were already the first intellectual attempts to introduce market in limited form to the Soviet economic model, which through the failure of perestroika lead to the acknowledgment of the need for market economy in 1989 (Sutela and Mau 1998).

In other words, over the course of 20<sup>th</sup> century Soviet economists went through a process of giving up one by one the defining features of socialism so that at the end there was not much left of it (Balcerowicz 1995). By 1989 the deviation from the mainstream economic science came to an end. The Soviet economists had finally joined the club of free-marketers, knowing probably better than anyone else that socialism turned out to be "the longest road from capitalism to capitalism" (Soviet joke q.t. in Rosser and Rosser 1996: 57).

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<sup>58</sup> Russian economist Nikolai Petrakov, for instance, published an article in *Novyi Mir* in 1970, which explicitly argued for abolishing the image of socialism as a single factory. Moreover, in the same article he argued that social objective function does not exist and openly called for a pluralistic political process (Sutela and Mau 1998: 55)!

### ***The Role of Opposition***

There are two quite different conclusions possible to draw from publications on the role that institutions of higher learning played in the suppressed society like Estonia. Based on previously described soviet higher education ideology and policy it is reasonable to expect that one of the key roles of a university in SU was to legitimate the Soviet political and economic model. Yet, it has been argued by Estonian social scientists that university became an important institution of resistance in soviet Estonia, and as Ruutsoo states, was the institution that made the "Singing Revolution" possible (Ruutsoo 2001: 164).

Indeed, as the former Rector of University of Tartu has warned there is a desire to present and describe the university and its recent history as structure that was primarily resistant and hide that in fact the reality was a mixture of toadying and protest, informing and resistance (Tulviste 1997: 14). While keeping in mind that the mentioned functions do not need to be mutually exclusive, an attempt is made to critically examine what was going on. In order to do it, the roles played by academic staff and students are analysed separately.

### Students

Students of Estonian institutions of higher learning hardly engaged in pro-independence resistance movement in Estonia during the soviet era. Data collected by Niitsoo shows that between 1955 and 1962 secret organisations that aimed at restoration of independence were set up by male secondary school students. Although there were few freshmen who joined one of the organisations, vast majority of the members came from the secondary schools.

Niitsoo argues that along with the acceptance of soviet rule, practice of soviet rituals and increased membership of CP<sup>59</sup> in Estonia, the secret student organisations ceased to exist in the beginning of 1960s. The feelings of public resistance substituted with (unintentional) collaboration with the soviet regime structures. For the age group that attended institutions of higher learning, the first step was a membership and active participation in such soviet institutions as the Communist Youth Organisations. Although the "positive correlation" between membership in the Communist Youth Organisation and collaboration with the regime structures has been noticed by a number of scholars (e.g. Ruutsoo, Vilgats, Vooglaid, Kuuli, and Allik & Vooglaid), opinions differ about the motivation and actual effect of the cooperation.

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<sup>59</sup> Data about Communist Youth Organisations membership numbers at the two largest institutions of higher learning in Estonia - Tallinn Polytechnic Institute and State University of Tartu confirm Niitsoo's argument. The organisation had at Tartu University 339 student members in January 1950, 2587 in April 1965, 3471 in the beginning of 1970 and 4989 in 1980 (Siilivask and Palamets 1982: 340-43). Student membership at the Tallinn Polytechnic Institute's Communist Youth Organisation at corresponding years was 887, 2361, 3572, and 4966 (Graf 1985: 190).

On the one hand, Niitsoo claims that the tactics of "soaking through" (i.e. getting into the soviet regime structures and trying to change things from within) was meant to fail from the beginning because Soviet system was so conservative that all the attempts to change anything were eliminated from the very beginning (Niitsoo 1997: 63).

On the other hand, there are suggestions which claim that collaboration was good for the future of Estonia. For instance, Palumets and Titma argue that active participation of Communist Youth Organisation increased the likelihood of becoming a member of CP which, in turn, allowed to influence the processes taking place in Soviet society (Palumets and Titma 2001: 115, 119). Along the same lines, Vooglaid states that the Committee of the Communist Youth Organisation of the Tartu State University become the strongest force leading to actions of pro-independence and self-governing (Vooglaid 1998: 80) and Ruutsoo sees this organisation as the premier source and training camp of the leaders of Singing Revolution (Ruutsoo 2001: 164?, 2002: \_\_\_\_\_).

It is difficult to evaluate these claims for two reasons. First, the above mentioned scholars provide little empirical evidence to support their hypothesis. (This is the case even with Mikk Titma, who generally speaking is following the empirical tradition in his sociological studies and words his conclusions very carefully). Second, all of the above mentioned individuals were insiders, who were either active dissidents as Niitsoo or student activists/young scholars who tried to fix the system from within as Titma, Vooglaid and Ruutsoo. In this respect these statements seem to be nothing more than politicised attempts to (re)write resent history. That is, the successful legitimation and monopolisation of policy making by the political forces which were born out of Estonian Congress, have revoked a reaction of illegitimised groups and the national completion of "who is/was more Estonian" has been taken into the pages of social science.

There are further complications associated with the understanding of the role that university students played in the collapse of soviet system in Estonia because of the differences between generalisations and the factor that university students did not take a form of Weberian social class in Estonia. As summarized in the *Appendix 2*, interests, socio-political involvement, attitude and activities of different generations and groups within these changed over time. While the Communist Youth Organisation and the people who were connected to it in 1960s might have had oppositional characteristics as described by Rootsoo, Vooglaid, Kuuli, Allik and Vooglaid, the group characteristics changed in 1970s and again in 1980s. In 1970s the attitude, motivation and activates of the students who took a position in political issues were even more diverse. They could have been

- (i) collaborators - who followed the official party line and perhaps tried in this way to fix the system from within;
- (ii) dissidents - who distanced themselves from the official line; or
- (iii) "in between" students, who tried find the balance between collaboration and dissidence<sup>60</sup>.

Priimägi and Juske predicted that in 1980s it would be less difficult to make a distinction between partisan (i.e. communist) and non-partisan "activist" students as the political and cultural activism of Estonian students would considerably decrease after 1970s. Evidence suggest that the vast majority of 80s generation did indeed lose interest in political issues and became opportunistic and more materially oriented, instead. Even though that there are important people (e.g. Mart Laar) who would not like to think that the generation of 80s was indifferent about political and cultural issues<sup>61</sup>, the overview of the activities of the Committee of the Communist Youth Organisation of the Tartu State University during the last quarter of the twenties century by Vilgats shows that political appointment of Arnold Koop to the Rector of State University of Tartu in 1970 and deteriorating living conditions ended all student dissident and nonconfirmative activities. On the one hand, student life was channelled into politically acceptable forms in all Estonian institutions of higher learning, including the State University of Tartu. On the other hand, the physical condition of dormitories had deteriorated to an extent that it did not allow the students to think beyond issues most directly connected to their well being (Vilgats 2001: 198, 200). To the disappointment of soviets, the concern over satisfaction of Maslow's basic needs lead to reorientation from self-educating to jumble markets and discos. Moreover, rather than working for the benefit of the Soviet project, the A-political disco-jeans generation of the 1980s contributed towards the collapse of soviet system, as will be argued in more detail under the section of *Legitimisation crisis theory*.

While it is important to notice that the student generation that was dissatisfied with the living conditions of soviet era was just one small segment of a much larger population that felt the same way, students who were active in *the Phosphorite War* represent a much smaller group of society that evoked the national feelings and as some observers claim, initiated the events that lead to the collapse of SU and restoration of independent Republic of Estonia<sup>62</sup>. More particularly, by the spring of 1987 the war had reached the second stage when it

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<sup>60</sup> For details see Appendix 3.

<sup>61</sup> Laar who protects his age group and describes it as "open and responsive generation" that did not give up on independent thinking and ethics, is accepting that the generation had learned how to take personal advantage of the weaknesses of the system since they had not grown up in fear (Laar 1998: 104).

<sup>62</sup> See for instance the statements by Aare (Aare 1999: 9), Lippmaa (Lippmaa q.t. in Aare 1999: 210, 213).

moved from the fight behind the scenes, between functionaries and scientist to the public. Students spoke up approximately a month after the governmental plan to open phosphorite mines in North-Eastern part of Estonia was made public in the TV program "Panda". Without going into the details, it can be said that students did play a role in dramatising the phosphorite issue. Having said this, it must be stressed that they never became the central figures in the process: by far the most important individuals in the war were TV journalist Juhan Aare and scientist Endel Lippmaa.

Is the above given analysis that students did not engage in public opposition enough to claim that they had nothing to do with the collapse of SU and restoration of independent Estonia? No. As the following paragraphs argue, students of Estonian institutions of higher learning did contribute towards restoration of independent Estonia. Estonian institutions of higher learning continually brought together and socialised groups of students that later became the national elite. One the one hand it was disadvantageous for building of homo soveticus with appropriate soviet identity, mentality and obedience. On the other hand, it became the most important contribution of university to Estonian state project.

Instructions of higher education of Soviet Estonia were not very selective but still manage(d) to influence the processes in society through selection and socialisation of the national elite. As mentioned under the section where the Soviet higher education structure was discussed, the admission to Estonian institutions of higher learning was the least competitive within the SU (Balzer 1992: 166). Surprisingly enough, under these conditions the higher education establishments did not contribute towards upward social mobility of lower social classes. As the results of longitudinal research by Saar, Helemäe *et. al.*, Titma and Saar show, the student body continued to be composed primarily of the highest social strata: offspring of professionals, party officials and cultural elite.

The way facilitation of "old boys network" took place at soviet universities resembles build-up of social capital at prisons. That is, just as the ((post)-soviet) prisons fail to achieve the aim of transforming a criminal into law obedient citizen, soviet era institutions of higher learning in Estonia failed to create the proper Soviet elite that would truly believe in Marxism-Leninism-Stalinism. Just as prisons function as mach-making and continuing education centres, so did the institutions of higher learning (especially the State University of Tartu) in Estonia. Both of these establishments brought together a group of people that learned to know each other, built up social capital/trust as well as thought new skills to each other. After realising from the institutions both of the groups have proved to behave differently than expected from them by the regime. Criminals commit new crimes and as will be discussed later, university graduates make

policy making and business life less open, democratic and transparent.

As an example of how students organised training in subjects that were not officially taught by the soviet era institutions of higher learning in Estonia, one can mention the clubs of Sociology<sup>63</sup>, BIT<sup>64</sup>, History<sup>65</sup>, and International Relations<sup>66</sup> at the University of Tartu. These *invisible colleges*<sup>67</sup> were set up and run by the students, united people that were interested in subjects and topics that were not officially taught at universities, organised meetings and field trips where students and guest lectures made presentations, collected and disseminated material that was difficult to get through official sources. Furthermore, these organisations tried to overcome the lack of information (up-to-date library resources) by asking guest lectures who had had a chance to go to conferences abroad, to come and share information as well as impressions with students.

As an example of how student organisations that were not directly connected to the soviet era institutions of higher learning functioned as important institutions to build social capital, Estonian Students Society and Estonian Students' Building Brigades have attracted a lot of public attention. Although further (sociological) research to establish what have been the effects of these organisations on the personnel politics of Estonian governmental structures, business life and sponsorship deals is desirable, it would be clearly be an overstatement to say that these organisations had a direct role to play in breaking down the Soviet regime.

#### Academic staff.

To explain why there are so few examples of teaching staff of Estonian institutions of higher learning that deliberately engaged in resistance activities, several explanations are possible.

On the one hand, low participation of Estonian academics in the secret pro-independence organizations could be explained with the effective activities and practices of the soviet regime structures. It is not a secret that

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<sup>63</sup> According to Vooglaid, The Club of Sociology was institutionalised by the Rector of the University of Tartu, Mr. F. Klement. Although it is often called/referred to as The Laboratory of Sociology, the official name after institutionalisation (and before it was closed down) was \_\_\_\_\_ . For further details about the organisation see Vooglaid 1998, Pede 2001, Ruutsoo 1990, 2002.

<sup>64</sup> For further details see Lepik 1998.

<sup>65</sup> For further details see Lukas 1998.

<sup>66</sup> For further details see Jaanson 1998.

<sup>67</sup> These organisations were actually never called *invisible colleges* in Estonia. Although they did have something in common with similar organisations elsewhere in Central-Easter Europe (e.g. Hungary), there remained some differences. Most importantly, Estonian student initiatives were not underground/secret organisations - they used mostly university facilities for their meetings and dissemination of material.

- members of university teaching personnel were under political control<sup>68</sup> - after all they had to ensure the transmission of Marxist-Leninist ideology and values to the future generation of elites;
- publishing was (self-)censored to a large extent<sup>69</sup>;
- behaviour and loyalty were "lightly" controlled by and career made dependent on the membership of CP<sup>70</sup>;
- sentences were written into soviet Penal Code<sup>71</sup> in order to discipline, reinforce the loyalty and if necessary punish for the activities that could be interpreted as anti-soviet activities or attracting youth to act or become anti-communist.

Therefore, it is unlikely that an academic, who did not make a secret out of the understanding that the soviet economic system was (fundamentally) wrong or that the soviet political regime was either (essentially) illegitimate, unchangeable or unreformable, could have got a teaching position in any Estonian institution of higher learning<sup>72</sup>.

On the other hand, it is possible as Lauristin argues that during the times when open political opposition was impossible, universities (together with arts, literature and journalism) developed cultural forms of opposition and "became the pivots of public cultural resistance" (Lauristin 1997: 74). The fact that it is difficult to find support to such claims is explainable. According to Ruutsoo, the main condition of successful resistance was to operate while "not being caught" with "evidence" (Ruutsoo 2002: 49)<sup>73</sup>. For

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<sup>68</sup> According to Academic Jüri Martin the Presidium of the Estonian Academy of Sciences as well as the Central Planning Committee kept a list and control over the teaching personnel. Therefore, it should not be a surprise that some observers like Tomusk describe the general feeling of distrust that such situation created among academic staff with Foucault's maxim when "each comrade becomes an observer" (Tomusk 2000: 136).

<sup>69</sup> Raisma, and Jansen say that official censorship was actually just the final check. While Raisma argues the primary censor of any academic manuscript was the author (Raisma 2001: 137), Jansen argues that leaders of academic institutions kept a close eye on the personnel in order to make sure that "nothing would happen" (Jansen 1998: 144).

<sup>70</sup> Palumets and Titma argue that CP did not recruit members of cultural elite into the party because they were ideologically convinced communists. Rather, representatives of cultural elite and academics were recruited in order to control their behaviour and loyalty, and starting from 1960s to follow the policy of forming educated nomenclatura that would be capable of solving the problems of the global power (Palumets and Titma 2001: 106, 116).

<sup>71</sup> Article 70 and 198 in the Penal Code of the ESSR.

<sup>72</sup> Moreover, as the example of Jüri Kukk (chemist from the University of Tartu, who was imprisoned into soviet labour-camp and later executed by the regime) shows that even western type of Marxism/communism was intolerable for the soviet system. For details see Taagepera 1989.

<sup>73</sup> To discredit the teaching personnel of the Estonian institutions of higher learning that did engage in underground resistance movements, Ruutsoo says that "[t]he intellectual resources as well as the social capital of these groups (networks, shared trust) were rather limited. In the 'Andropovian' Soviet Union, with society heavily penetrated by the KGB, this kind of 'romantic activism' had little opportunity to survive and was rather self-destructive. The basic documents of these 'democrats' more resembled benevolent utopias than the plans of practicing freedom fighters" (Ruutsoo 2002: 145).

instance, he speculates that in order to survive academic disciplines and departments at the State University of Tartu developed their own distinctive forms of resistance, which as he says, were probably coded in the discipline specific language while "[f]or outsiders a loyal/ambitiously loyal impression was left" (Ruutsoo 2001: 156, Ruutsoo 1998: 122).

Having brought attention to the two different explanations that are possible to offer to explain the low participation of Estonian academics in secret resistance movements, and taking into account that experiments in the past are impossible to conduct, one could not agree more with Ruutsoo that *The Letter of 40* tested what the regime had been able to form out of the University of Tartu (Ruutsoo 2001: 153). That is, the hidden campaign to find members of academic staff who were willing to sign the open letter that draw attention to the russification and the related social problems that it had caused in Estonia can be used as a examination to measure the extent of implicit and explicit control over the ideological soundness that the CP and KGB had managed to achieve at the State University of Tartu. Arguably it should also give an indication what was the overall situation at other institutions of higher learning in Estonia and allow to overcome the lack of information about the role that the regime structures played in assuring the loyalty towards the soviet system<sup>74</sup>.

Retrospectively it seems to disappoint some<sup>75</sup> that there were only three<sup>76</sup> members of academic staff who were willing to sign the letter. Ruutsoo explains such a low support by limited time, circumspection and lack of momentum (Ruutsoo 2001: 135-155). Out of these exploitations circumspection is the most important because two weeks should be long enough to approach the right people. First of all, soviet regime exercised quite heavy control over foreign travel, including but not limited to academic travelling, leading in addition to academic isolation also increased presence and availability to local stakeholders. Second of all, Tartu is a relatively small location where most of the university departments are located on half a square kilometre and many share buildings. Therefore, the low support seems to be an effect of factors among which available time for signature collection is relatively unimportant while wariness and fear are definitely some of the most important causes.

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<sup>74</sup> For instance, Tomusk has attracted attention to the difficulty to assess the role that the regime structures (Communist Party and KGB) played in assuring the loyalty towards the system (Tomusk 2000: 135).

<sup>75</sup> Ruutsoo seems to puzzled how and why the University of Tartu that according to his writing of 1990 carried on "Spirit of Tartu", and played a very important role in forming the general political atmosphere failed at the "exam". The article of 2001 and the some parts of PhD thesis of 2002 are attempts to explain and also justify the "failure" and offer a counterargument to the recent rewriting of history by Laar, Vahtre, Kiin, Niitsoo and others.

<sup>76</sup> According to Ruutsoo the actual number could have been slightly higher but it was decided that only one member per family could risk, and Linnart Mäll and Juri Lotman should stay out of it as they already had problems with KGB - the signature could have passed the line of tolerance (Ruutsoo 2001: 152).



In this context, the fact that the organisers did not get caught is not enough to claim that the members of academic personnel of the State University of Tartu were largely resistant to the regime. Rather, it shows that the organisers shared a general fear of being caught and therefore were very careful to whom they approached and showed the letter. It is also worth mentioning that the organisers expected the highest support from the departments of linguistics and history while little or no support was expected from departments like law, and philosophy<sup>77</sup>. To the disappointment of the organisers, no members of academic personnel from any of the mentioned departments supported the initiative.

Last but not least, if it is true as Endel Lippmaa argues that during the soviet era

it was possible to influence things only in the bureaucratic games using purely scientific argumentation. The use of competently selected facts at the right commissions at the right moment gave results even during the times of Stalin (Lippmaa q.t. in Aare 1999: 72).

Then it is possible to explain the low participation of teaching staff in resistance activities with the universities' lack of superior scientific knowledge. One gets the impression that the research capacity of the institutions of higher education was indeed inferior to that of institutes of Academy of Sciences from the *Evaluation of Estonian Research in Natural Science* (summarised in Appendix 3). It shows that:

- there were twice as few research projects at institutions of higher learning (that Estonian scientists dared to put to international evaluation) as there was at the Academy of Sciences;
- the quality of research conducted at institutions of higher learning was on average of considerably lower quality than that of the Academy of Sciences<sup>78</sup>.

Therefore it should not come a surprise that it was Endel Lippmaa, the only Estonian scientist who belongs to the list of top 100 most cited Soviet scientist (\_\_\_\_\_) and not somebody else from Estonian scientific community, who was behind the campaigns which ensured that Moscow's ideas to establish nuclear power plant next to Võrtsjärv, solid heating agency at Vasknarva and the third oil-shale power plant in Estonia remained just plans (Aare 1999: 65).<sup>79</sup>

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<sup>77</sup> According to Ruutsoo the selective approach represented a particular form of expertise of resistance culture. The organisers were experts which departments and groups one could find scientists that one could trust at all, who would not betray them and who would perhaps even sign the letter (Ruutsoo 2001: 154).

<sup>78</sup> For details see Appendix 3.

<sup>79</sup> It is important to note that not all Estonian scientist were thinking about and acting with accordance to the national interest of Estonia like Lippmaa. In fact, there were many Estonian scientist who collaborated closely with the regime. For instance, academic Mihkel Veiderma and the whole Enrichment Processes Sector of the Institute of Chemistry at the Academic of Sciences of the ESSR was working hard on the schistose, which would have allowed to establish phosphorite mines in North-Easter part of Estonia. Most remarkably Ello Maremäe spent fifteen years working on her

### ***Perestroika and Gorbachev Factor***

In hindsight, it appears remarkable that Mikhail Gorbachev could receive so much acclaim for the economic policies that he pursued from 1985. From our current perspective, it appears all too evident that his rule was characterized by and unprecedented confusion in economic policies. Virtually every mistake that could be made was made. The Gorbachev administration carried out a massive destruction of the old Soviet system. In history, Gorbachev will go down as one of the greatest destructors of evil, while he failed in all his many attempts at construction. Gorbachev's great achievement was that he swiftly and relatively peacefully broke down one of the most centralized and ruthless systems the world has seen to date (Åslund 1993: 184).

It has been argued repeatedly that the perestroika started by Gorbachev failed because it was spontaneous, rather than well thought through reform plan. The analysis of the speeches that Gorbachev made before he was elected to the post of General Secretary of the CPSU Central Committee demonstrates the opposite, however. They show that Gorbachev was thinking deeply about the problems that Soviet society was facing at the time (Mau 1996: 33) as well as that already by the end of 1984 he had formed the reform program "in vague but strategic terms" (Åslund 1993: 185).

Yet, the fact that Gorbachev was personally thinking deeply about the problems that the Soviet state was facing, is not enough to suggest that he single handedly drafted the perestroika reform package. As John Maynard Keynes, says in the last paragraph of *The General Theory of Employment, Interest and Money*,

[p]ractical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back (Keynes 1997 (1936): 383).

In fact, Gorbachev has made no secret of the fact that he received the theoretical inspiration for perestroika from Vasili Nemchinov's 1964 article (Sutela and Mau 1998: 50). One can find the influence of Nemchinov and his ideas of dual-track planning (central planning with limited independence of enterprises (Ibid., 48)) in the reform proposal of 1986 as well as in 1987 law on Socialist Enterprises drafted by leading Soviet economists<sup>80</sup> (Ibid., 56). These reform ideas

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candidate degree that was to find the practical solutions how to detach from the mineral resource all valuable. Aare says that all that time Maremäe worked with the knowledge that the mineral resource will be very beneficial for Estonia. Yet, after the successful defence of candidate dissertation which had resulted in addition to the awarded degree also in allocation of resources for half-industrial experiments, Lippmaa convinced her that the mineral represents a very big danger for Estonians because her technology would facilitate the establishment of gigantic phosphorite industry at North-Eastern Estonia. (Maremäe admits that the career change was difficult but she did it because "academic Lippmaa was in my eyes such a big authority that I believed him..." (Maremäe as q.t. in Aare 1999: 33)).

<sup>80</sup> According to Sutela and Mau, the group that put together the proposal included Aganbegyan, Abalkin, Bunich, Petrakov, Popov and Shatalin (Sutela and Mau 1998: 56).

became the cornerstones of perestroika, contributed to quasi-marketisation ("privatisation of the state by the state" as argued by Kryshstanovskaya and White 1996: 720-21) and through this also to the collapse of SU.

More particularly, Tatyana Zaslavskaya, subordinate of the above referred academic Abel Aganbegyan, and inventor of perestroika, first became an adviser to Gorbachev as Minister of Agriculture under Antropov. Once Gorbachev became General Secretary, Zaslavskaya was made "the first director of public opinion surveys ever to be appointed to the people's democracy" (Perking 1996: 129). Her publications (such as *The Second Socialist Revolution*) clearly demonstrate that she was arguing for a return to true socialism, not for a Western-style free market. The policies that were introduced under glasnost and perestroika reflect her ideas of democratic socialism:

The absence of exploitation, more equal incomes, the elimination of poverty, freedom of expression, democracy in the workplace, respect for human rights and the rule of law, a higher level of morality, and more equality between the nations of the Soviet Union and its satellites. Social ownership did not mean state ownership but workers' control over public industries; it was not an end in itself but only a means to the end of social democracy (Ibid., 130).

History has shown what the introduction of these ideas in SU meant. (A more theoretical explanation how a change in political arrangement leads to a change in economic system can be found under the section of *Modernisation*).

But there is another, more personal, way through which university affected Gorbachev, perestroika policy and the history of SU. First, point has been made by Brown that Gorbachev received better education than any of his colleagues in Brezhnev's Politburo. That is, while most of the Soviet leaders had got a narrowly vocational at provincial technical institutes or ideological training at the Party School, Gorbachev graduated with distinction the Law Faculty of Moscow State University in 1955 (Brown 1996: 29).

Second, the years at Moscow State University brought him together with his future wife - Raisa Maksimovna Titorenko who got an advanced scientific degree in sociology<sup>81</sup> and taught at the Stavropol Agricultural Institute in the 1960s and 1970s. It is remarkable as Gorbachev has disclosed a number of times, that Raisa became his closest advisor with whom he would discuss everything (Brown 1996: 32-35)!

In short, it turns out that some of the leading Soviet academics and universities contributed towards the collapse of the soviet model. But rather than jeopardising the system from within, they were really trying to fix it.

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<sup>81</sup> Raisa Gorbacchev got her advanced academic degree for the work on The Way of Life of the Collective Farm Peasantry: A Sociological Study which was later turned also to a book.

(Un)fortunately, the failure of Gorbachev to reform the Soviet economy and society was the failure of the ideas and policy advice of some of the best Soviet social scientist and his closest advisors was the end of Soviet system.

### **Modernisation**

"Education is the key that unlocks the door to modernization." Statements like this recent one are gaining acceptance as truisms by many nation builders, policy planners, and scholars interested in the modernization process. Once regarded as an essentially conservative, culture-preserving, culture-transmitting institution, the educational system now tends to be viewed as the master determinant of all aspects of change (Coleman 1965: 3).

As already indicated, modernisation theory basically says that history progresses in marked stages towards an end goal, and that there is some correlation between the country's socio-economic development and the type of political system. To disclose the secrets of developmental success and failures, developmental economists and modernisation theorists have studied the role of education in the process.

Economists have worked especially hard to establish a link between education and modernisation as there seems to be something inherently logical in the feeling that education leads to economic growth and development<sup>82</sup>. Their efforts go back to 1960s, when Noble prize winner Theodore Schultz wrote about investing in people and Gary Becker published the first works "human capital" theory. Over forty years, these conceptual underpinnings have continued to inspire researchers and have given rise to new interpretations but have failed to produce conclusive understandings about the role of education in economic development<sup>83</sup>.

Modernisation theorist such as Lispet (1960: Ch.2, 1993) and Fukuyama (1992: Ch.10) do not do much better than economist. They suggest that there is a correlation between education and democracy in the context political development. Yet, they

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<sup>82</sup> Many economists would probably be amazed if not shocked should they learn that their ideas have been classified as under modernization theory. I believe the controversy has more to do with the fact that economists and sociologist hardly read each others work than with the subject matter itself. As in many other instances, the scientific curiosity of the two are often very close to each other. Consider for instance, how "modernizationist" is the message of Aghion and Howitt in the introduction to *Endogenous Growth Theory*: "economic growth involves a two-way interaction between technology and economic life: technological progress transforms the very economic system that creates it. The purpose of endogenous growth theory is to seek some understanding of this interplay between technological knowledge and various structural characteristics of the economy and the society, and how such an interplay results in economic growth (Aghion and Howitt 1998: 1)

<sup>83</sup> Although World Bank declares that after decades of research, human capital theory has provided statistical evidence and earned widespread acceptance (World Bank 1999: 6) there are many scholars who would disagree. For the overview of controversies still existent, see Aghion and Howitt (1998) and the sources quoted therein. For a critique of human capital theory (especially why the developmental impact of education has varied across countries and fallen short of explanations) see Pritchett (2001).

also admit that it is impossible to establish a causal link between the two of them. More particularly, they come to the conclusion that existing data does not allow to suggest that education is sufficient condition for political development or to formulate the exact mechanism through which schooling may function as socially supporting institution for democracy.

In order to make a contribution to the debate on the role of education in modernisation, the following paragraphs will explore what was the function of university in social, economic and political development of SU. More particularly, an effort will be made to identify the relationship between expansion of higher education and modifications in stratification system that it causes on the one hand, and the changes in socio-economic and political system, on the other.

In 1917 Bolsheviks seized the power in Russia and soon its leadership faced a difficult situation. The state was in their hands but the writings of Marx which had supplied the blueprints for revolutions so far, turned out to be of little help when it came to actually operate a country. Moreover, as Russia had not followed the predicted sequence of Marx and became socialist country without ever being (truly) capitalist, Stalin opted for forced industrialisation—Russia's *Gig Spurt Forward*. It was estimated that highly skilled workers like engineers are needed for undertaking such a project. Yet, there were only 8,396 Communists (less than one percent of the total CPSU membership) who had completed higher education in SU at that time. To complicate the things further, these Communists were of little practical use in industrialisation as almost half of them had got their degrees in non-technical fields and were employed in education, health and welfare (Fitzpatrick 1992: 150). To start the forced industrialisation in such circumstances, the Soviet regime had to rely initially on people with technical expertise but no proper ideological and class background. Removal of the "bourgeois" class from the key positions in industry had to wait for the first results of Stalin's massive Cultural Revolution.

The Cultural Revolution program that sent some 100000 factory workers and Communists *aparaziki* to acquire a university degree started a massive expansion of higher education and structural change of Soviet stratification system. Moreover, student numbers continued to increase very sharply beyond 1940s, after meeting the urgent need to replace the capitalist element in Soviet society. According to Laas, the number of students at institutions of higher learning increased some 3.5 times in Estonia and some 4.5 times in FSU between 1940 and 1985<sup>84</sup> (Laas 1989: 97).

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<sup>84</sup> The number of higher education students per 10,000 inhabitants increased from approximately 42 students to over 190 in FSU, and from 43 to over 160 in Estonia during the same period (Laas 1989: 97).

In other words, Stalin and his followers saw university as an important institution that would allow the SU to industrialise, catch-up and suppress the capitalist rivals. He anticipated that the expansion of higher education and consequent change in social strata will put people with proper education, ideological and class background to the key positions in Soviet society<sup>85</sup>. Taking a functionalist view, he could not foresee that the massification of higher education could affect Soviet society in a different way. He seems not to have been aware of the "side effects" of schooling<sup>86</sup> and that the "key aspect of modernisation is the demand for increased participation in politics"<sup>87</sup>, which if not met, may lead to revolution (Huntington 1986: 39).

In other words, it seems that Stalin and his followers believed that the educated elite can be controlled through administrative (i.e. intelligence service) and ideological means. Yet, as Perkin shows in *The Third Revolution*, it was not the case. More particularly, Soviet meritocracy<sup>88</sup> had three problems that lead to the collapse of communism and the SU.

First, there are never enough top jobs for those educated, qualified, and ambitious for them, and so self-generation discontent is built into the system. The intelligentsia outside the system, or even the more intelligent within it, are motivated by personal autonomy, especially those in science, scholarship, or the arts, and are driven to question the system and demand its reform. They resent those they perceive as incompetent or dishonest who reach the top and lord it over them. Equality for them means equality of opportunity, and a generational revelry provokes secret contempt for the old reactionaries above them. Second, the successful meritocrats, old and young, are apt to steer more and more of the resources towards themselves, at first by legitimate means for their supposedly superior effort, which is at odds with the egalitarian ideology, and then, as opportunity offers, by chicanery, fraud, and bribery, the Danegeld always offered to people with arbitrary power. They are thus drawn imperceptibly into a vortex of corruption, when they find that even their legitimate goals of production or administration cannot be accomplished without *blat* - bribery and influence - and merely

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<sup>85</sup> Stalin admitted that the soviet state could not function without its own intelligentsia, saying that "[n]ot a single ruling class has managed without its own intelligentsia... It means that our country has entered the phase of development when the working class must create its own productive-technical intelligentsia, capable of standing up for its own interest in production as the interest of the working class" (Stalin qt. in Fitzpatrick 1992: 155)

<sup>86</sup> It has been demonstrated by Inkeles and Smith's study of six developing countries education produces a "side effects". They conclude that "students who had been in school longer were not only better informed and verbally more fluent. They had a different sense of time, and a stronger sense of personal and social efficiency; participated more actively in communal affairs; were more open to new ideas, new experiences, and new people; interacted differently with others, and showed more concern for subordinates and minorities. They valued science more, accepted change more readily, and were more prepared to limit the number of children they would have" (Inkeles and Smith 1974: 143).

<sup>87</sup> According to Portes (1973: 256), participation (including but not limited to interest and participation in political affairs) is the key theme of modernity writings. For further reference, see sources quoted therein.

<sup>88</sup> Perkin argues that in the SU "merit was defined in terms of education, experience, but above all loyalty to the regime and lip service to its ideology..." (Perkin 1996: 126).

to fulfil the plan requires cutting corners and being economical with the truth. Hence, even the upright operators are forced to pay, if not receive, *blat* in order to get things done.

Finally, when corruption itself becomes self-destructive, not merely immoral and unjust but exploitative to the point of transferring so large a share of society's resources to the elite as to deny the populace sufficient purchasing power to maintain the planned rate of economic growth - milking the cow to dryness - then even the meritocrats themselves, or the more intelligent among them, become disillusioned with its failure, particularly in international competition, and for the sake of self-preservation seek to reform it (Perkin 1996: 126-7).

Perkin's analysis seems to support the claim that higher education had an important function in making the modernisation theory work and Socialist regime to fall in SU. Although it is not clear to what extent did universities engage in corruptive undertakings, it can be established that institutions of higher learning supplied large number of university graduates who in addition to occupying the technocratic positions, started to seek political power in 1970s. According to Konrad and Szelenyi, they were ready to enter into strategic alliance with bureaucrats in order to form a new ruling class (Konrad and Szelenyi 1979). Although this historic alliance was not formed in CEE due to the systematic resistance from the side of bureaucracy (Eyal et. al. 1997: 77), Palumets and Titma have found evidence that it did happen in Estonia (Palumets and Titma 2001: 117, 119).

Should it be the case as Eyal et. al. argue that socialist regimes failed to take advantage of the historic possibility to further rationalise and legitimise their rule, the modernisation thesis finds further support. That is, by leaving the large proportion of well-educated population out of the political process together with the Soviet emigration policy, soviet regime put an extra pressure to the socio-political situation. Soon before long, the policy of "no voice, no exit" lead to the events of 1989/91.

Yet, should it be the case that intellectuals indeed took the power over as Palumets and Titma argue happened in Estonian context, it was the failure of graduates of Soviet/Estonian institutors of higher learning to rationalise and legitimise soviet rule. An elaboration of this argument is the topic of the two following sections.

### ***Modernity and Competition with the West***

Modernity refers to the period since the European Enlightenment and to the key concept of the latter-progress. Believers of modernity hope that through the application of reasoned and empirically based knowledge, social institutions could be created that would make men happier and free them from cruelty, injustice, and despotism" (Hamilton 1992: 37). Inspired by the arguments of dialectical materialism, Soviet leaders believed along the same lines to the theory of modernity that humans are able to achieve almost anything and

undertook a major 'modernisation' project to catch and suppress the West.

This put universities together with the academy of sciences for understandable reasons to the centre of the modernisation project. Socialism (at least in theory) gave scientist for the first time in the history of humankind the possibility to put science and rationale at the centre of economy and national development. Soviet science and technology were to offer solutions and opportunities that were unprecedented in the history of humankind. They were to make the economy radically more efficient, easier, enjoyable and creative. More particularly, they were to put an end to waste (achieve economic efficiency and be ecology-friendly at the same time), decrease the working hours, offer possibilities for personal (intellectual) development, and long-distance travel, exploit alternative energy sources, increase the per capita income, health standards, the quality and quantity of consumer products etc. (Nikolajeva 1978: 60-69). In short,

[b]y making academic endeavour a mandate of central planning, the state-socialist modernization project held out a promise of generously nourishing and utilizing the nation's intellectual and scientific resources, to an extent that would have been unprecedented and structurally and institutionally impossible, even in the most developed capitalist society (Peteri 2000: 280).

To achieve these ends, the system channelled considerable resources to higher education and R&D. For instance, ESSR increased its budgetary allocations to R&D almost nine times-- from less than three million roubles in 1950 to 22 million roubles in 1985 (Laas, 1989: 115). The actual amounts of money that were channelled to R&D sector in Estonia was likely much higher as the figure does not include financial allocations to a number of research institutes that were attached to ministries, large industrial enterprises as well as military/defence sector.

In terms of the quantity of output, the Soviet system increased the number of university graduates, candidates, doctorates, researchers (in absolute as well as relative terms) very radically. With the exception of the number of institutions of higher learning, which reached its peak (six) in Estonia by 1952, all other parameters show a very sharp increase over 40 years. For instance, the number of graduates of the institutions of higher learning increased in Estonia 18 times in 42 years -- from approximately 5000 in 1941 to 90000 in 1983 (Laas 1989: 100)<sup>89</sup>. Also the number of researchers per 10,000 persons active on the labour market had increased to a very high level by 1985. Dageyte *et. al.* comparison of the number of Estonian researchers with selected OECD countries, shows that Estonia had more scientists per capita in 1985 than

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<sup>89</sup> For an overview of the sharp increase in other parameters in FSU and Estonia see Laas 1989 pp. 100-41. For comparative international enrolment rates across countries see UNESCO, Young, Barro & Lee.



the neighbouring Scandinavian countries or even the US<sup>90</sup> (Dagyte *et. al.* 2000: 76).

Having established what and how was aimed to be achieved through modernity in SU, the discussion proceeds to analyse why progress, catching up and suppressing the West, never happened despite of the investments and commitment that were made. It will be argued in the following paragraphs that the quality of (higher) education, research and development, rather than shortcomings of the productive system as such, explain the inability of soviet system to achieve the dream of modernity. This reasoning questions the widespread positive image of Soviet research and (higher) education. Furthermore, it suggest links between the quality, method of teaching and the inflexibility of the system to move from one industrial age to next. Also disasters that the attempts to apply engineering knowledge in public policy produced, will be highlighted.

More particularly, false impression of the educational quality of ECE/FSU has been formed by student achievements at the international science and mathematics tests<sup>91</sup>. Therefore, the failure of socialism has been blamed on the economic rather than on the educational system. Closer look at the outcomes of these tests suggests, however, that the soviet educational system probably had quite a bit to do with the Soviet decline. Contrary to the overall positive impression, students from ECE/FSU outperformed western countries only in fact awareness. The scores become approximately equal when students are asked to apply the facts, and the situation turns to the advantage of West over East once they are asked to use the knowledge in an unanticipated circumstances (Kavalyova as qt. in World Bank 1996: 125, **Appendix 4**).

In terms of scientific achievements the situation was hardly any better. *Evaluation of Estonian Research in Natural Science* (summarised in Appendix 3b) shows that the level of Estonian research in natural sciences was average in international terms. On five point scale, the mean grade of all research projects that Estonian Academy of Sciences institutions and universities risked to put on the international evaluation, was 3,07. Rather than being at a very high international level, of great international interest with broad impact and with publications in internationally leading journals, and having the researchers that were among the leading figures in the field, the situation was just fine. Unfortunately good international level with publications in internationally well-known journals and the researchers that had a good international reputation within their subfield was not enough to materialise the soviet modernisation dream.

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<sup>90</sup> There were 79 researchers in Estonia, 34 in Denmark and 51 in Sweden and 77 in the US per 10,000 persons active on the labour market (Dagyte *et. al.* 2000: 76).

<sup>91</sup> See OECD and Education and Testing Service for comparative international assessment of science.

Moreover, economic history of the SU shows that the two contradictory aims of the systems of (higher) education and R&D set major limitations for development in long run. On the one hand, educational system had to produce loyal citizens and devoted elite. On the other hand, SU needed researchers that would engage in cutting age research and come up with ground-breaking scientific discoveries. The failure of SU to develop or even produce a copy of the personal computer despite of the industrial espionage as well as abundance of resources that were made available, shows that educational system that was based on conformity, lead to lack of creativity and innovation both in the whole soviet system.

In a way, modified version of von Mises argument that socialism could only function on the last form of capitalism<sup>92</sup> became bitterly true. That is, in accordance with Mises' theorising, Stalin introduced an institutional framework to SU that was suitable just for the third industrial age of steel and organic-chemistry. But the educational system's stress on fact awareness and suppression of creativity stagnated the soviet system and created difficulties for industrial system the latter was unable to overcome. First, it proved to be inflexible in moving to the age of automobiles and petrochemicals, and later even more incapable to compete in electronics, information, and biotechnology (Chirot 1999: 22). Mawdsley and White argue that it happened because soviet engineers had instead of some knowledge in social sciences, Marxist vision that "the biggest enterprises are the best." Moreover, they say that it explains why SU failed to become truly modern and why it collapsed so unusually easily (Mawdsley and White 2000: 115-6).

There is one more aspect which shows how the Soviet development model that made the bet on engineering, contributed towards the collapse of SU. Indeed, Professor Loren Graham from MIT, the editor to *Science and the Soviet Social Order* who is said to be the world's leading specialist on the development of Russian and Soviet science and technology, comes to a conclusion that the narrow engineering education collapsed the SU. He says that most of the leading political figures of the latter-day Soviet Union had received a stunted and narrow engineering education which was "intellectually impoverished, politically tendentious, socially unaware, and ethically lame (Graham 1993b: \_\_\_\_\_).

Hence, one can conclude that the SU collapsed because the system failed to translate the quantity of higher education and R&D into quality. Although, the former SU was one of the most enthusiastic supporter of higher education and science in general, Soviet science managed to make very few tangible contributions to materialise the soviet illusions of modernity. That is, academic institutions failed to produce the necessary outputs for making the move from

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<sup>92</sup> For the original argument see Mises 1989 [1920].

industrialisation to post-industrialisation and socialism collapsed. Contrary to what has been suggested in different contexts elsewhere, the sad truth is that a big part of Soviet failure has to do with the quality of teaching and research at the institutions of higher learning as well as academy of sciences. Instead of leading the Soviet society to a new developmental level (not to mention communism<sup>93</sup>) higher education together with the R&D sector trained narrow minded engineers who failed to compete with the West in the development of new technology and once they got close to power, contributed towards its dissolution.

### ***The legitimisation crisis theory***

The argument of legitimisation crisis theory builds on the previous sections. It takes the analysis that soviet higher education policy was designed to support the leaders' aspiration to modernise, build socialism in one country, catch-up and suppress the capitalist rivals as given. First, it argues that the structure of soviet system of higher education contributed to the failure of soviet economic model, which failed to legitimate the soviet project. Second, it uses the sequence of generations summarised in *Appendix 2* to argue that the key elements of the Estonian academic elite lost hope in the soviet project that they were supposed to maintain.

The process whereby political leaders seek the right to rule (authority) is called legitimation. Although power can be exercised through coercion and/or authority, it is well established finding that most political leaders realise that exercise of force is an inferior and only temporary method (Holmes 1997: 43). Soviet leadership was no exception in this respect. Although Stalin did use extreme form of coercion - arbitrary violence known as terror - to stay in power in the SU, it was mentioned in the section of *Soviet Higher Education Policy and Ideology* that "socialism in one country" as well as "catching up and suppressing" became the dominant national development policies in SU. In other words, soviet leaders tried to acquire authority by creating a socio-economic system that was more rational, technocratic, productive and would produce economic progress inexperienced in the history of humankind.

As it was demonstrated in the previous section of *Modernity and Competition with the West*, soviet socio-economic system failed to deliver the "goods" in its attempt to put science and rationale at the centre of economy and national development. That is, legitimisation of soviet rule in terms of economic progress failed. Soviet authorities could not claim the right to rule based on impressive growth rates, better quality, wider diversity or larger availability of consumer goods. Instead of establishing authority, increasing general

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<sup>93</sup> Communism is used here to refer to the Marxian understanding of highest stage of human development, (preceded by socialism as a transitional period, which enables society to move from capitalism to communism).

dissatisfaction over the soviet system's inability to deliver "goods" illegitimised its rule and made the disco-jeans generation of the 1980s that worshipped anything that was western caricature of soviet socio-economic progress.

It was also increasing difficult for the soviet leadership to legitimate the rule in terms of goal-rational mode. That is, the soviet leadership promised to reach communism by 1980 but as the *Appendix 2* shows, it was especially complicated if not impossible to legitimate the soviet rule in teleological terms after 1968. Soon before long, the major (extreme) form of legitimation crisis that typically leads to system collapse occurred. Holmes says it happens "[i]f the whole, or at least most of the key elements, of the elite loses faith in what it is doing and in the very system it is supposed to maintain" (Holmes 1997: 53)<sup>94</sup>.

In summary, universities were to legitimise soviet rule in Estonia in two ways. First, academics were there to teach and students there to learn Marxist-Leninist ideology that would make the relatively well-educated individuals (future soviet professionals and elite) not to question the rule. Second, universities were to legitimise soviet rule by making an important contribution to the soviet modernisation project. But university failed to create the well educated *homo soveticus* with appropriate soviet identity, mentality and obedience, and the economic progress that would have put the superiority of the soviet model beyond question. More specifically, universities failed to play the expected role in production function by producing graduates and scientific discoveries that would have allowed the system to produce "goods" and economic progress that would have legitimised the system. Universities also were there to produce the professionals and supplied the members of elite that allow the political system to function. As the well-educated lost the faith in the regime, a systematic change was a result.

### ***Unresolved Russian Question***

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<sup>94</sup> More particularly, Holmes says that in many ways, identity crisis and general collapse of self-legitimation provides one of the most important and persuasive explanations of the collapse of communism. According to her there were basically two stages to this. "The first was the growing realization by communist leaderships that the more they attempted to transfer their systems to a legal-rational basis, the deeper they fell into a fundamental *rationality and identity crisis*. ... [T]he identity crisis resulted from the fact that the changes being implemented and intensified in the 1980s meant that most communist systems had all the negative features of both capitalism and communism ... and few if any of the positive aspects of either...

Despite this identity crisis, the communist systems may have lasted a little longer had the authorities had the will to revert to coercion as the dominant mode of exercising power. But with a few exceptions, notably China, this did not occur in 1989. Instead, many communist regimes (and systems) moved to another phase of the major legitimation crisis, the collapse of faith in the external role model ..., and hence to the ultimate (second) stage, of self-delegitimation and system collapsed (Holmes 1997: 53-54).

Szporluk argues that the SU fell because it failed to solve the "Russian Question" and refers to the practice of Russians to claim their nation to have a superior form of civilisation (Szporluk 1997: 65) that had with the help of Marxism-Leninism opened the secrets of history/development and would offer an alternative to capitalism as well as deliver growth rates and "goods" in the way unprecedented in the history of humankind<sup>95</sup>. One could not agree more with Szporluk that other nations, among them Estonians, rejected this claim, did not want to be included among the *sovetskii narod*, and hardly thought very highly of anything associated with Russia or of her culture.

The Estonian state making in the beginning of 20<sup>th</sup> century shows that formation of ethnic intelligentsia (where universities play a very important role) and nation-state building go hand in hand<sup>96</sup>. Therefore, it is reasonable to conclude that if the soviet regime really wanted to achieve what Szporluk, Haav, Ruutsoo, Laar, Titma and Saar claim it did—to create one soviet nation (that would logically have meant wiping out the Estonian nation), it should have apart from being what it was claiming to be – superior form of modernisation and not the "abortive form of modernization" as some have called it. Moreover, it should have stopped all publishing, and training (including higher education) in Estonian.

Actually it would be wrong to say that soviet regime did not at least partially attempt to achieve the above described. Historical overview of the events at the Tartu State University in 1950 – 1970 by Siilivask clearly demonstrates this. It is unclear what would have been the effect on Estonian culture and elite reproduction, should the academic personnel and students of the Tartu State University have failed in the political struggle for the control over power at the university's party organisation. As diminishing trend of the number of ethnic groups in former SU suggests, there have been number of nations that were unable to fight against russification (Taagepera 2000).

It would need further comparative research to establish whether these nations did not survive due to the historical legacy of not having the experience of being independent or geographical proximity to the Western culture like Estonians. Compared to the vanished nations, one could probably argue that institutions of higher learning that used Estonian as language of instruction during the soviet era, performed exactly the role that one of the most celebrated Estonian philosophers Uku Maasing has claimed the role of national university should be – the symbol of Estonian intellectual independence and stronghold (Maasing 1933: 1622).

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<sup>95</sup> For further details see for instance Gellner, who says that soviet communism was "to an extent unusual and perhaps unique in the history of social systems, the implementation of an elaborate, total, all-embracing and deeply messianic theory" (Gellner 1992: 247).

<sup>96</sup> For details see Raun 1987.

In short, university kept the Estonian national identity, culture and the language alive. In this context the quality of higher education and research in Soviet Estonia is less important than contribution that it made through elite reproduction. Therefore, the role of university before the restoration of independence does not seem to be so much about removing the soviet regime rather than preservation of Estonian culture and nation!

## HIGHER EDUCATION POLICY AND IDEOLOGY OF THE REPUBLIC OF ESTONIA

In post-communist world, the political and economic regime change of 1989 brought hope for return to Europe and Western world. Although education together with science and health care were areas of state socialism which according to the popular understanding managed to make considerable progress in CEE/FSU<sup>97</sup>, the regime change was nevertheless expected to make the higher education more western.<sup>98</sup> It was to bring an end to such socialists' legacies as separation of research from teaching; overspecialisation of study disciplines; highly centralized curriculum design; lack of institutional autonomy, funding, and international contacts. In short, the systematic change was to make the system better funded, more democratic, less centralized, regulated, and ideologically driven.

Estonia does not differ from other CEE/FSU countries in terms of expectations that the end of socialist era and the restoration of independence were expected to bring. One can find similar hopes, dreams and wishes to the ones mentioned above from the statements of designers of Estonian research and higher education reforms - Martinson<sup>99</sup>, Aaviksoo<sup>100</sup> as well as from the suggestions put together by the Swedish experts<sup>101</sup>.

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<sup>97</sup> See for instance Buitter 2000: 616, and Nelson 1997: 253.

<sup>98</sup> Two clarifications must be made. First, although there does not exist such a thing as "western" or "european" higher education (see Clark 1983) ECE/FSU higher education officials nevertheless have their own personal notions of what it means to be a normal/respectful university. Second, it is worthwhile to point out that the *return to Europe* has not been solely an East European idea, Hans van Ginkel, for instance, quotes one of the recommendations of the 1992 European Rectors' Conference (CRE) in Bonn: "One of the major issues for CRE in the next future is to bring eastern and western European universities into equalization. We hope ... for providing eastern European staff and students with access to western universities' ideas and practices" (CRE-action in Ginkel 12-13).

<sup>99</sup> Martinson states that the aims of the R&D reform in Estonia should be the following: (i) researchers should engage in search for truth, free themselves from ideological control and the state/CP intervention. (This should include increased academic freedom and possibility to undertake research in areas of scientists' own choice); (ii) research should become more relevant to the society's needs; (iii) Estonian scientists' reputation in the global science community should increase; and (iv) system of scientific organizations should become more diversified and dynamic.

<sup>100</sup> Aaviksoo lists seven priorities for the higher education in CEC, including Estonia: (i) increased institutional autonomy along with increased responsibility, better quality assurance and standardization; (ii) increased enrolments to meet the public demand (iii) commercialisation in order to get extra funding and contact with the real world via market forces (iv) reach a proper balance between the academic and vocational programs (Degree programs should therefore be reconsidered, shortened and modernized); (v) development of part-time and continuing education schemes; (vi) internationalisation and globalisation; and (vii) extensive use of information technologies (Aaviksoo 1997).

<sup>101</sup> The most remarkable western advice how to reform Estonian science was made in the context of the evaluation of Estonian research in natural science that was carried out by Swedish Natural Science Research Council in 1991. It listed a number of recommendations, many of which (would have) had important implications for Estonian universities. For details, see Appendix 6.

Also many processes that have taken place in Estonian higher education since the regime change seem to be similar to the ones in CEE/FSU. On the one hand, the emerged transition need for new professionals<sup>102</sup> seems to have been met by social demand<sup>103</sup> and institutional supply<sup>104</sup>. On the other hand, when it comes to evaluating to what extent qualitative changes have materialized in Estonia, there is little consensus. While a number of Estonian Ministries of Education have reported substantial reform progress in higher education<sup>105</sup>, critics are less confident about the extent of progress achieved. For instance, OECD has observed in addition to some positive developments much longer list of issues that need additional attention (OECD 2001: 172 - 195), Tomusk assesses the actual outcome of the transformation as nothing more than cheap cosmetic changes (Tomusk 2001a?) whereas Vooglaid describes the situation in very critical terms (Vooglaid 2002).

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After some twelve years of independence and endless brainstorming<sup>106</sup>, Estonia still has no national strategy for education. In December 1997 the Estonian Ministry of Education informed the public "that the directions for the educational reform were not yet clarified among the experts" (Tomusk 2001a: 63 - 64). Although few years later consensus was claimed to be achieved (OECD 2001: 174), the new government that took the office in the beginning of 2002 withdraw the strategy from the legislative discussions. While some critics (e.g. Mailis Rand) claim that the bill had to be withdraw because it set too many objectives, others (e.g. Jaak Aaviksoo) state that it was a reflection of far too many compromises. Last but not least, there are sceptics like Ülo Vooglaid and Peeter Kreitzberg who claim that one of the key weaknesses of the strategy was its functional view of education. It understood education just as a source of (national) economic well-being and the medium how to meet the needs of the state (Juurak 2002: 19). Finally, one of the authors of the bill, Olav Aarna, had to confess that the

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<sup>102</sup> For instance, the Chief Economist of the EBRD, Willem Buiter has pointed out that "[t]he educational system of the former Soviet Union produced a labor force that was literate, numerate and sophisticated". But "the skill mix inherited by the Russian Federation exhibited a fair degree of mismatch from the point of view of modern market economy, which is predominately service-based. There were too few accountants, lawyers, actuaries, financial analysts, applied economists, managers, management consultants and marketing specialists and too many rocket scientists (Buiter 2000: 616).

<sup>103</sup> Depending on country, there has been 50-300 per cent growth in ECE/FSU higher education student enrolments, according to Tomusk's estimates (Tomusk 2000a: 172). In Estonia the number of students has more than doubled between 1993 and 2002 (Statistical Office of Estonia 2003: 171).

<sup>104</sup> The number of institutions of higher learning has increased from six to 33 over the course of transition. See Appendix 7 for details.

<sup>105</sup> See for example the statements by Aaviksoo 1996: 15 and Klaassen 1998: 138, Rummo 1994: 52.

<sup>106</sup> Brainstorming has resulted in three drafts. One prepared by President's Academi Council, second by Educational Forum and the third one by the Ministry of Education. For details see President's Academi Council 2001, [www.haridusfoorum.ee](http://www.haridusfoorum.ee) and Loogma and Sarv 1998.



strategy was trying to do the impossible: it defined the characteristics of the desirable system as well as the ways and means to achieve it before the national agreement on more fundamental issues was reached or clarified (Aarna 2002: 78).

Does this mean that there has been no higher education policy and ideology that has been implemented and followed in Estonia? No. The fact that there is no educational strategy that was consciously developed, approved and implemented, does not mean that there has been no higher educational policy. Rather, it means that the policy has been hidden and one should analyse practice to find out what it has been about. To do that, the framework of Salter and Tapper will be applied as it allows to analyse the processes regardless of the fact whether the policy has been spelled out and approved by the legislator or not. As with the analysis of the Soviet (Estonia) higher education policy and ideology, there are three questions that will be asked about the components and means of the Estonian post soviet higher education policy. These are as follows:

- (i) What are the desired types of individual (educational product)?
- (ii) What is the desired social order?
- (iii) What is the structure of higher education like?

(i) Since 1870 when Jakob Hurt verbalized the vision that Estonia could never become large in numbers, yet in spirit (Hurt 1939), education has been valued especially highly among Estonians<sup>107</sup>. Unfortunately this value has contributed only very little to the understanding what should the desired types of individual educational products be. For instance, the Law on Education of the Republic of Estonia that was adopted on March 23, 1992 sets the aims of education loosely:

- (1) to create favourable conditions for the development of personality, family, and the Estonian nation, as well as of national minorities, of Estonian economic, political, and cultural life and of nature preservation in the global economic and cultural context;
- (2) to shape law respecting and obedient individuals;
- (3) to create conditions for continuing education for all.

Although it is remarkable that the most explicit objective set by the law-makers is to use school system to shape loyal individuals<sup>108</sup>, the other aims of the law are less clear.

Yet, the neo-liberal/conservative ideology that has dominated the policy-making after restoration of independence in Estonia suggests that the desire of the state has been to create individualistic citizens. For instance, the economic policies of privatization and liberalisation as well as social policies regulating labour market (unemployment) and child benefits have been extremely harsh and seem to reflect the wish to

<sup>107</sup> See also the Appendixes 8 - 11.

<sup>108</sup> Actually even the explicit aim of using school system to shape law-obedient individuals might be unconstitutional since the section 38 of the Constitution of the Republic of Estonia provides that "Science and the arts, and their instruction shall be able to exist freely"

create a state where citizens take full responsibility for their actions. They are consistent with the vision of Mart Laar (one of the godfathers of Estonian post-1991 reforms) who states in his reform program called *Success Model* that a sense of responsibility for oneself and for one's family must be developed by each nation that wants to gain success (Laar 1994).

If the state policy was consistent in all sectors and areas one would expect higher education policy to follow the same ideological principles. Analysis shows, however, that in Estonian post-communist public policy of (higher) education this has not always been the case. Rather, Estonian higher education policy is a strange mix of libertarianism, social democracy and state socialist planning which becomes especially visible through the analysis of the method of financing.

During soviet era, state took a paternalistic approach towards students. If one passed the entrance examinations, studying at the institutions of (higher) learning were free of charge. Also stipends, especially for students that were doing academically well, were made available. Although due to the lack of financial resources the system of stipends was cancelled and state institutions started to accept fee paying students illegally in the beginning of the reforms, the system of free of charge study places for the selected ones has stayed. As Tomusk has noticed, each time Estonian Government has tried to introduce direct tuition fees in Estonia, public outcry has been the result (Tomusk 2001b: 207-8). The typical contra argument against the establishment of fees is based on access to education and equality of educational opportunity<sup>109</sup>. Wording the argument "poor, yet talented" social perception is grated as if most of the students were from socially disadvantaged backgrounds, who would loose the opportunity to get higher education if fees were introduced. As a result, the state has maintained a financing system of higher education that does not differ fundamentally from socialist planning. (While during the soviet era the number of "specialists" to be educated in a given discipline was determined as a result of bargaining between enterprises, line ministries and the central planning institutions; it is now determined by bureaucrats through negotiations between the Ministry of Education & Research and public universities).

However, analyzing the public policy at another angle, slightly different picture emerges. Data available about the secondary school graduation examinations and university admissions allows to suggest that educational system in independent Estonia reproduces social classes at least as much as the soviet system did<sup>110</sup>. There are indications that

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<sup>109</sup> See for instance Kreizberg 1998.

<sup>110</sup> To get an idea how soviet educational system was used to reproduce social classes during the soviet era see Titma and Saar 1995, Saar 1997 and Helemäe et. la. 2000.

Estonian method of higher education financing is benefiting the relatively well-off. First, while the trend among the rich to send their offspring to the West to acquire higher education is increasing along with their financial possibilities, the rural youngsters are finding it increasingly difficult to acquire any post-secondary education. Second, following the logic of transferability of different capitals developed by Bourdieu (Bourdieu 1996b) allows to speculate that Estonian higher education policy is following *Director's law*<sup>111</sup> if not Karl Marx's logic of *ideological superstructure*<sup>112</sup>.

In short, Estonian state policy of higher education is controversial and reproductive. On the one hand, it has created a system where regardless of one's social background, student does not have to take any direct responsibility for his or her post-secondary educational choices if s/he performs well at high school final exams. For the selected, Estonian state provides higher education free of charge. On the other hand, it creates citizens that take full responsibilities for their actions (i.e. educational choices and financial commitments) by forcing them to cover the full cost as well as the risk of their higher education choices.

(ii) The desired social order of the post-soviet Estonia reflects the desire to belong to Europe. Kirch *et. al.* state that "[n]obody of distinguished Estonian researchers, writers or politicians has doubted that Estonia belongs to the western world" (Kirch *et. al.* 2001: 71). Indeed, one can find the description of Estonian transition processes as the return to the West(ern World) in the writings of Laar (2002), Lauristin and Vihalemm, Marran and Vungo, Taaler as well as Vihalemm. Moreover, all the Estonian post 1992 governments have prioritised integration to western and European structures through their foreign policy. Although Savisaar is against of such aspirations and has argued for more intensified relations with East-Asia (Savisaar 1999: 21, 198), large proportion of not so well read Estonian opinion leaders got the intellectual justification for the lack of alternatives to the West after the translation of *The Clash of Civilizations and the Remaking of World Order* and the visit of its author, Samuel Huntington, to Estonia.

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<sup>111</sup> „A hypothesis, formulated by Aaron Director, that in a democratic system the government will tend to pursue policies which redistribute income from the relatively rich and poor towards the middle income groups. The hypothesis follows from the *Medium Voter Theorem* which argues that, in a democracy, politicians will most closely reflect the preferences of those voters in the middle of the political or social spectrum. Consequently politicians will pursue policies which favour middle income groups" (The Dictionary of Modern Economics 1983, pp. 109 - 110)

<sup>112</sup> Ideological superstructure is „a set of ideas, ideals, and beliefs that legitimizes and justifies the arrangements and institutions of that society. These ideas characteristically take a number of forms—political, theological, legal, economic—but their function, in the final analysis, is the same: to explain, justify, and legitimize the division of labor, class differences, and vast disparities of wealth, status, and power that exist within a particular society" (Ball and Dagger: 1995: 134).

The initial hope that it would be possible to pick the best elements from capitalism and keep the nice features from socialism has not materialised. Despite of the result of sociological studies, which showed that two-thirds of the population in CEE wanted the social welfare system to stay unchanged (Ferge as q.t. in Kornai 1997: 339-40) or that 67 percent of the Estonian elites would even have increased the social transfers from the state to the society (Steen 1997: 279), Estonia has followed very neo-liberal social policy<sup>113</sup>. The Estonian economic transition experience shows that the mix of paternalistic system with the neo-liberal ideas did not look feasible for reformers. In Griffin's typology Estonia chose outward-looking strategy of development with the following characteristics:

- market as the primary method for the allocation of resources;
- minimum role of the state and maximum reliance on private sector;
- special emphasis on foreign trade sector as it is believed to bring in addition to the access of larger markets also foreign capital, knowledge, technology and (management) skills (Griffin 1989: 26-7).

Although there are some scholars who say that Estonia has been the only post-communist country where the neo-liberal reforms have worked and brought positive results (\_\_\_\_\_), the number of Estonian academics have started to question the success story are far more numerous. That is, after some ten years of state making, they claim that Estonia needs a different development strategy to the one described above, has been stressed. Although academics praise the reforms that have created the stable banking and the macro-economic environment, they would like the state to give more attention to human and social dimension. As a solution to existing social problems and limits to economic development, some of the policy advocates together with natural scientists that have been pampered by the PHARE and EU Framework programs, have put forward a number of proposals<sup>114</sup>. Should the vision of the authors of the *Knowledge-based Estonia* strategy materialise, Estonia could soon be characterised

as a knowledge-based society where the sources of economic and labour force competitiveness, and improvement in the quality of life, stem from research directed towards the search for new knowledge, the application of knowledge and skills, and the development of human capital. In a knowledge-based society, research and development are valued highly as one of the preconditions for the functioning and development of all of society (Knowledge-based Estonia 2002: 6).

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<sup>113</sup> Mart Laar summarises the Estonian social policy very simply: "You either work or you die" (Laar as q.t. in Anna \_\_\_\_\_)

<sup>114</sup> See for instance:

- Knowledge-based Estonia - Estonian Research and Development Strategy for 2002-2006,
- Strategy Sustainable Estonia 21,
- Success of Estonia 2014.

Even though that some of the authors believe these strategies to change the future of Estonia<sup>115</sup>, the real effects remain to be seen. Should, however, the critics be right, Estonia will become something similar to South Africa. More particularly, Tomusk argues that the above mentioned efforts are nothing more than attempts of academic institutions and individuals connected to these, to benefit from public funds (either European or Estonian) and is just as likely going to fail as the soviet modernisation project did. I would argue that if the policy will be followed consistently over a course of decades, the social structure of Estonia is likely becoming to mirror that of South Africa. That is, educational system is characterised by large number of low quality and a small number of elitist schools that continue to (re)produce existing social inequalities, and enable some occasional innovations to emerge.

(iii) Talking about educational structure one has to take a closer look at the institutional differentiation, models of assessment, curriculum content and teaching methods.

- *Institutional differentiation.* Officially there are four types of institutions of higher learning: public universities, private universities, state applied higher education institutions, and private applied higher education institutions. In reality there is also a 5<sup>th</sup> type - institutions that exist and operate outside the legal boundaries of the Republic of Estonia.

Public universities - institutions of higher learning that existed before the restoration of independence, renamed themselves universities<sup>116</sup>, "inherited" relatively lot of property, traditions, socio-political capital and hence quickly overcame the loss of legitimacy in the beginning of 1990s.

There are number of factors that have contributed towards the situation which has made the public universities the most important players in the Estonian (higher) education market. First, they kept the property, traditions and socio-political capital of the establishments that existed prior to the restoration of independence. Second, number of them (e.g. University of Tartu and Tallinn Technical University) also enriched themselves with prestige, personnel, research projects and build-in socio-political capital of reorganised Academy of Sciences research institutions. Third, the mentioned resources, established legitimacy and successful lobby have allowed the public universities to have the financial stability, enjoy soft budget constraint and

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<sup>115</sup> For instance, some of the state policy advocates have called the Knowledge-based Estonia "probably the most important Estonian economic policy document" (Tiits et. al. 2002: 39).

<sup>116</sup> There was one exception though - University of Tartu that was the only university type of institution in Estonia before 1991. Their legitimisation process meant abolishment of the word State from its name (Tomusk 2001: 204).

inefficiency. Their successful monopolisation of the state support to university education and research, steadily increased enrolment of fee paying students<sup>117</sup> and collection of funds from foreign sources (especially from EU through its Framework Programmes), is remarkable.

Private universities - institutions of higher learning that were established with two exceptions<sup>118</sup> after the restoration of independence. Initially a number of them (e.g. Estonian Institute of Humanities, Estonian Business School and Concordia International University Estonia) enjoyed positive public image as the former soviet era institutions of higher learning had lost some legitimacy in the course of collapse of communist regime. (For instance, it happened a number of times that promising students would transfer from public universities to private ones or would not even consider starting their studies at public institutions in the beginning of 1990s). However, this honeymoon period was short lived due to increasing number of institutions and successful rebellion of the public universities (Tomusk 2001b: 203-4). Although before the law (constitution) all are supposed to be equal, in reality some are more equal than others in Estonia. For instance, the fact that the best private universities have their study programmes accredited by the Ministry of Education & Research and they have the right to award a state diplomas and/or degrees, has not brought them public funding through the mechanism of state order.

As a result of the described processes combined with the lack of vision and ethics of the owners, limited amount of research activities and almost total absence of public funding, private universities have lost much of the legitimacy, prestige and interconnected to those also qualified lecturers and students. Since the student fees have almost been the only source of income for the private universities, the emerged financial crisis have forced all of them to accept students almost regardless of their ability to undertake university level studies. All these processes combined with the expected outcome of the EU enlargement (that will only increase the competition<sup>119</sup>) will force the private universities sooner

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<sup>117</sup> The student numbers have almost doubled in six years: it was approximately 20000 in 1995 and close to 40000 in 2001 (Statistical Office of Estonia: 2002: 171). See also appendix 4 for details.

<sup>118</sup> Estonian Institute of Humanities was established within the legal framework of Gorbachev's cooperative enterprise under the auspices of the Estonian Association of Writers already in 1988. The forerunner of the Estonian Business School, the other private university that started its operations before the restoration of independence, started its operations in 1989.

<sup>119</sup> Many students that are today willing to pay a fee to a local private university will likely prefer a UK or Dutch institution in the near future because the tuition fees in these countries for citizens of EU member states are comparable to what Estonian institutions already charge.

or later to merge with public universities, sell themselves to foreign investors or go out of business.

State applied higher education institutions - former post-secondary vocational educational institutions that similarly to the University of Tartu amended their by-laws and elevated their status to something that did not formally exist (Tomusk 2001b: 204). Because of the socio-economic reasons these institutions have in addition to the educational function the social welfare function to fill. As the secondary school graduation grades of the students from economically disadvantaged social classes do not often allow them to compete for a possibility to get free of charge education at public university, and the inherited value system does not push them to purchase the education for a fee either, state applied higher education institutions have become quite popular. The attractiveness of these institutions has increased even more as some of them (e.g. the Estonian National Defence and Public Service Academy as well as the Estonian Joint Military Educational Institutions) attract students in addition to free of charge education also with state provided room and board, secured employment after graduation and connected to the latter, get dept relief by escaping the repayment of student loan.

Private applied higher education institutions - there are two types of institutions that fall into this category. First group incorporates small private institutions giving instruction in theology. Similarly to the state applied higher education institutions they have social welfare function to fill. But contrary to these, they do not prepare personnel to the state structures, rather than spiritual leaders for the religious sects that host them.

The second group of institutions that fall into the category of private applied higher education institutions lack almost everything. They have very limited financial resources because:

- ✓ low social status;
- ✓ low demand for their services;
- ✓ lack of qualified students;
- ✓ state funding mechanisms/priorities;
- ✓ (lack of) vision of owners;
- ✓ public higher education policy;
- ✓ total dependence on single source of income - tuition fees.

They lack social prestige because limited amount of:

- ✓ financial resources;
- ✓ qualified teaching staff;
- ✓ qualified students;
- ✓ qualified real estate;

- ✓ library resources;
- ✓ research.

Institutions that operate but are not recognised by the Republic of Estonia - these are institutions that have been established as a response to the national language policy that has considerably decreased the number of study programmes offered in Russian and the export efforts of Russian universities. Since students of these institutions have very little if any contact with the institution and their professors that grant the diplomas, some claim these institutions to be nothing more than diploma mills<sup>120</sup>.

- *Models of assessment.* Although the Estonian Ministry of Education approved the unified five point grading system for institutions of higher learning in February 11, 1999, not all the universities and applied institutions of higher learning follow it. For instance, the University of Tartu and the Estonian Business School use the Anglo-American system of letters (A-F).

The soviet assessment practices have not entirely ended in the Republic of Estonia. There are still institutions and departments within the establishments that continue to put group pressure and conformity among students through oral exams and the display of student test results openly in the schools' hallways. Also, the fact that students can retake exams several times without being really penalized for it, shows in addition to the soviet legacy also lack of vision, and unwillingness of the universities to change. It does not support the neo-liberal/conservative public policy aim to create citizens that are capable of taking responsibility for their action.

- *Curriculum content.* There are some visible changes in curriculum content that have taken place over the course of transformation: classes that were introduced to the programs during the soviet times to develop Marxist-Leninist worldview and loyalty towards the regime, have been eliminated from the programs. There are additions that have been made to the study programs that existed prior 1991 and new majors and study disciplines that have been introduced after that are also visible but less tangible.

On the one hand, the increased academic freedom, contacts with the western institutions as well as the information

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<sup>120</sup> The fact that Ambassador of the Russian Federation last spring handed over the diplomas at the \_\_\_\_\_ graduation may suggest that these institutions enjoy some official recognition. Yet, one should also take into account the Russian foreign policy aspirations in Estonia in the context of which the legitimacy of these institutions looks slightly different.



technology revolution (expansion of internet) have allowed the university administrators to learn and in some of the cases also to copy the curriculum from the West. On the other hand, the change is intangible as the very same academic freedom that allowed these new subjects to be introduced, allows these to be thought as the lectures see appropriate. Although academic freedom to teach is generally regarded as something good for the quality of education that gets delivered<sup>121</sup>, in post-soviet Estonia it has meant that institutions of higher learning often produce confused graduates. The warning signs seem to be the largest in social sciences. The fact that many subjects were not taught during the soviet era is still affecting the content (ideas, theories, methodology and authors introduced) and method of instruction in these science areas. Since program directors do not have academics that would have got (proper) training in sociology, economics, political science, international relations, these subjects are thought by people who have got their training in neighbouring subjects (e.g. philosophy, psychology, history). Although this is not bad in itself as the new knowledge is often born at the boundaries of different disciplines, if there is too much of it (as it seems to be in Estonia), students will lack the basics and be confused at the end of their studies.

- *Teaching methods.* Teaching methods have not much changed since the restoration of independence. Although there are exceptions, teaching is still largely based on lecturing and characterised by lack of discussion, methods of case study and group work. Since the availability of textbooks in the native language and students' independent work with (foreign) academic literature limited, lectures are still "middlemen of ideas". Learning is still based on memorizing rather than problem solving, and although library resources have been improved to some extent, students and their instructors take little advantage of these investments. Academic circle is still about four months of notes taking (i.e. production of study material) and one month of real studying and exams taking.

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<sup>121</sup> This is so because the person who is teaching at university level is expected to follow the developments in his or her field and "to choose the best material available for presentation to their students" (George 1997: 77)

## **BUILDING THE NEW**

The countries of East Central Europe (ECE) and Former Soviet Union (FSU) are going through the biggest socio-economic transformation that the world has seen since World War II. The experiment with socialism has ended and given an opportunity for many policy makers and social scientists to put their ideas, theories and dreams into practice. Not surprisingly the region has been referred to as "living laboratory" of socio-economic engineering.

After a decade of transition, there are ECE/FSU countries that are doing better than others. In some of the countries political stability, progress towards internationalization (e.g. becoming a full member of EU) as well as macroeconomic stabilization and growth recovery has been faster and/or smoother than in others. While this has raised interesting questions and proposed a number of explanations, the role of universities in these processes has not been analyzed. To fill the gap this chapter will examine the role that universities have been playing in Estonian post-communist transition.

### **Policy choices made vs. path-dependency**

Two theories of post-communist transition that have perhaps the most dissimilar understanding of the reasons why some of the post-communist countries are doing better than others have been supplied by the explanations of "path-dependency" and "right policy choices". While the former says that the success stories of the post-communist transition are countries that were relatively better-off long before the regime change, the latter says that the policy choices that countries have made after 1991 have determined their relative success and failure.

In the given context (where the aim is to understand what has been the role of university in the post-communist transition of Estonia), the two opposing explanations will be analyzed together. It will be demonstrated that due to the path-dependency of underdevelopment of social sciences in the FSU, the role of universities in Estonian reform processes has been minimal.

As a strong supporter of the "right" policy choices school Laar states in his "Success Model" that

[l]ooking at the development in the contemporary Eastern and Central Europe as well as in other countries which are carrying out economic reforms, one should notice that some particular rules exist there. It has become clear that the countries moving from order-economy to free market economy have to take certain measures that provide certain results (Laar 1994).

Without going into the details of the exact measures that Laar argues a country has to take if she wants to be successful, and assuming that the transition success and failure in ECE/FSU has really been the result of policies pursued, it is worthwhile to analyze who have been behind

the policy choices that Estonia has made and whether universities have had anything to do with them. In order to keep the analysis clear, the role of foreign and local experts in the Estonian reforms is analyzed separately.

#### The role of foreign experts

Comparison of Laar's "Success Model" to Williamson's "Washington Consensus" shows very small differences and raises questions about the original source of ideas. If Laar simply followed the consensus that had emerged among the political Washington of Congress and senior members of the administration and the technocratic Washington of the international financial institutions, the economic agencies of the US government, the Federal Reserve Board, and the think tanks (Williamson 1990: 7)

then there is little bride that he or local academics could take for making the right policy decisions. That is, should the analysis confirm the hypothesis proposed by Savisaar that Laar stopped his government's practice to discuss the development issues with local scientists and indeed preferred the advice of the small community of his closest politicians and the officials of international organizations (Savisaar 1999: 15-6), then one could say that Estonian universities had little to do with the Estonian "miracle".

Although Savisaar tries to show that Laar preferred his comrades and officials of the international organizations to Estonian scientists<sup>122</sup>, it is not clear that the systematic underdevelopment of social sciences in the FSU, including Estonia, would have allowed Laar to act differently. For instance, Sutela and Mau who have reviewed the history of postwar soviet economic thought, say that it was

[d]etached from any real theoretical framing, facing a lack of meaningful statistics, and in most cases anyway unable to analyse in any intelligible way what data might be available, Soviet economic research was usually not only boring but also quite valueless.

... Looking at the matter from the angle of theoretical economics, the situation was little better. ... But even pure theory languishes in a vacuum. It needs contacts with world of science, but even after the abolition of complete scientific

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<sup>122</sup> As a contrast, Savisaar draws attention to the fact that he together with Arno Kõörna and Erik Terk established the Estonian Future Congress that discussed Estonian development scenarios on its first congress on December 6-7, 1991 (Savisaar 1999: 18). One of the reasons why this initiative failed to affect the Estonian development processes was the fact that no consensus was reached and Savisaar had to go out of office. Although some of the key figures of that congress (Arno Kõörna, the President of Academy of Sciences and Olev Lugas, the Director of Institute of Economics of the Academy of Sciences) also participated in the Committee of Economic Reform that was very productive (it managed to produce almost 50 draft laws, legal regulations and degrees during the three months of its existence), the actual role of this body in the policy selection is ambiguous. For instance, they seem to have had a role in Savisaar's stabilization program which was controversial and hence abandoned as soon as Tiit Vähi took the primer's office.

autarchy in the late 1950s there were very few Soviet economists, indeed, who were publishable in western professional journals. During the most recent decades, Viktor Polterovich - a world class specialist on mathematical equilibrium and disequilibrium economics - was about the only successful one (Sutela and Mau 1998: 41).

Indeed, the ideas of Estonian economists how to reform the economy seem to suffer from the socialist legacy of underdevelopment of social sciences. Time has shown that most of the proposed ideas were so unrealistic or valueless that it is probably good that they were ignored by the reformers.

For instance, the idea of self sustainable Estonia by Savisaar, Titma, Kallas and Made turned out to be too optimistic if not utopian (Taagepera 1993: 130). Kõörna's plan to import from China the idea of special economic zones and make Estonia one of those within the SU was devaluated as the conditions of the two countries were far too different (Vokk 1987, Bronštein as qt. in Kelder 1997: 24)<sup>123</sup>. Mereste's ownership reform principle of using a mix of techniques (restitution, compensation and privatization) was used in Estonia but not because of their inherent public policy value rather than the result of political bargaining and little understanding what ownership reform really means. The actual privatization was advised by western consultants. (Although, Laar says that his team learned very much from the British privatization experts and experience (Laar 2002: 132), there is no doubt that the East-German Treuhand experience (which was imported to Estonia together with its original ideologist - Herbert B. Schmidt) had the largest and most prominent effect on Estonian privatization policy)<sup>124</sup>. Neither were the three different monetary reform proposals by Estonian economist (Vokk, Mereste, Raudsepp) given any serious consideration. Actually, it is not difficult to understand why the monetary reform team was not inspired by these rather than the advise given by the US, Slovenian, Swedish, IMF as well as Estonian expatriate economists<sup>125</sup> in the situation where systematic underdevelopment of social sciences had created a situation in Estonia were last theoretical article by Estonian economists on monetary policy was written in 1938 (Vokk as qt. in Kelder 1997: 43).

#### The role of local experts

Although the fact that foreign experts were used extensively in Estonian reform processes seems to suggest that that the socialist legacy of underdevelopment of

<sup>123</sup> László Csaba's research that highlights why it is very difficult if not impossible to copy the Chinese development scenario in CEC (Csaba 1996) also suggests how limited the understanding of Estonian economists (both the supporters as well as the critics of Kõörna's plan) in fact were at the time.

<sup>124</sup> To get an overview of Estonian reform process, see Terk 2000.

<sup>125</sup> See Appendix 12 for details.

social sciences in FSU effected who advised the reforms and the policy choices that were made in Estonia, it would be wrong to say that no local expertise was used in the Estonian transition. The list of key persons who were involved with the Estonian reforms shows that rather than representing the academic staff of Estonian universities, they have been officials of various Estonian ministries<sup>126</sup>. In a way, current research confirms the personal, but very well informed impression of a number of important Estonian politicians who despite of their opposing political views have drawn attention to the development that "officials are the largest, most influential, homogeneous and unified political party in Estonia" (Taimla qt. in Savisaar 1999: 48).

Apart from the fact that such developments seems to disappoint Estonian politicians, it suggest a manifestation of Konrad and Szelenyi's argument that intellectuals are on the road to class power<sup>127</sup> which deserves a closer analysis. If indeed politicians have lost their power<sup>128</sup> to bureaucrats in Estonia, it is important to understand why and what if any role did the institutions of higher learning play in these processes.

According to Savisaar, Estonian public policy making has went through three distinctive stages after the restoration of independence. During the first years of transformation, between 1990 and 1992, officials had a minor influence on politicians and public policy. They were used to be a "dependent", the Public Service Law did not protect them yet and the satisfactory working relationship between officials and politicians had not developed, yet. If there were problems with public servants, politicians could easily solve these by claiming the official to be "soviet" and simply dismiss them (Savisaar 1999: 49-50).

The situation started to chance and the public servants began to get more power after the leading political post had been filled by the first wave of politicians in the beginning of 1990s. Although the active people that entered the politics during the second wave could "only" occupy the leading positions of the public service

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<sup>126</sup> See Appendix 12 for details.

<sup>127</sup> For the original argument see Konrad and Szelenyi 1979, and for the modified verisons Szelenyi 1986, Konrad and Szelenyi 1991, Eyal et al. 1997 as well as Eyal et al. 1998.

<sup>128</sup> Savisaar and Laar agree with the argument of Jonathan Lynn and Anthony Jay's book *Yes, Mr. Minister*. According to this Estonian politicians who have become ministers have three duties:

- (i) to apply for additional budgetary allowances for the ministry;
- (ii) to ask for extra personnel because the ministry needs to expand;
- (iii) to do everything to get additional office space as the new departments and subdivisions of the departments need room for expansion.

(thinking of it as a good position to get promoted to even higher political post), with the passage of time an understanding emerged that the number of leading political posts is limited and the career of the ones who occupy these, unstable. It also became apparent that the real power is in the hands of top public servants as the ministers are often superficial, lack interest in the subject matter and therefore easy to manipulate (Ibid., 51-2).

Third wave of officials stated to enter public offices at the turn of the century. According to Savisaar, this generation consists of people who have got a degree in public administration at home or abroad, really believe themselves to be professionals, communicate with one another extensively, and are therefore likely to form a clan of its own. He predicts the role of this clan in Estonian policy making to increase in the near future even more because public servants have developed direct contacts with media and have more knowledge about the specific norms, regulations and technical details of EU. While the former allows the public servants blackmail the politicians if necessary and the latter creates a situation where officials can escape from following the political order or push through their vision with the help of a contact that they have established in Brussels, some EU regulation, directive or interpretation of these (Ibid., 53-5).

Having said this, it is worthwhile to make the point that although Estonian public servants might have acquired quite a bit of power, their efficiency has room for improvement. The country progress reports towards EU accession, prepared by the European Commission, keep mentioning the capacity problem of Estonian public service<sup>129</sup>. Although it may have a number of reasons (e.g. understaffing), the anonymous comment by a official of EU Delegation to Estonia suggests that Estonian public servants are hardly capable of wording the public policy problem that they would like solve with EU funding, and have the tendency to follow the deadline approach and submit project proposals that lack almost any substance. All of this should reflect the quality of graduates that Estonian institutions of higher learning are producing and Estonian public offices employing.

Last but not least, there seems to be one more reason why the foreign experts have been used so extensively and the role of Estonian academics has been so limited in Estonian socio-economic reforms and public policy making. Namely Estonian social scientists have a limited understanding what their role in policy making process could be.

The open letter of the 26 leading (!) Estonian social scientists from April 23, 2001, the missionary conference "Wheatear One or Two Estonians" a year later and the publication that combines the opinions, statements and essays written on the issue<sup>130</sup> show that the systematic underdevelopment of social sciences in FSU has left a rather permanent effect on Estonian social scientists. Since the social scientist do not seem to understand what kind of help the policy makers would need, they also do not envision how they could get a more prominent role in Estonian public policy process.

More particularly, Estonian social scientists have got the impression that politicians just need suggestions for *quick fixes* for the existing problems. Although, the researchers claim that their potential should be used in creation of a system which would avoid the emergence of unexpected problems and hence the need to react to them urgently, the simple truth seems to be that the Estonian social scientists do not have the answers to the public policy questions that politicians have. Therefore, scientists state that they could have two roles in Estonian public policy making. First, they would like the state to fund a large scale monitoring system which they believe would give results that could be used in policy making. Second, they see themselves as influencers of public opinion through media (Proos *et al.* 2002: 5-8).

Although monitoring/evaluation is an important component of the policy cycle and the use of media may affect the public opinion as well as the general climate of opinion/policy paradigm, public policy can be effected through these instruments in a rather indirect ways<sup>131</sup>. Furthermore, monitoring might allow to establish that the chosen policy has not been optimal since it is failing to achieve the policy aim(s). Yet, it is not sure that it will help the politicians to select a policy that would solve the problem. For instance, although there is enough facts and evidence that Estonian rates of HIV prevalence (Hamers *et al.* 2001: 84), birth, suicide, social inequalities, criminality and current account deficit are one of the worst in Europe, yet, social scientists have said very little what could be done to chance the situation.

### **Elite change**

Studies conducted by Steven Fish and Valerie Bunce indicate that there seems to be enough cross-country evidence that elite change leads to socio-political as well as economic changes – almost determining the success of post-communist transition. More particularly, based on cross-country study

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<sup>130</sup> See Vetik 2000.

<sup>131</sup> For a comprehensive overview what is the role that social scientist could play in public policy cycle see Stone *et al.* 2001.

of 26 ECE/FSU countries Fish demonstrates that elite replacement in the initial elections is a good economic success parameter. Bunce takes this idea even further, arguing that, in addition to the success of economic reforms, elite change in ECE/FSU determines also their political success.

As the necessary but not sufficient relationship between higher education and elite membership has been well established, it could be argued that Estonian institutions of higher learning have had a major role in social transformation if there was a major elite circulation<sup>132</sup> in Estonia.

Unfortunately the literature overview about the elites in post-communist Estonia shows that most of the Estonian social scientists who have studied elites in Estonia come to the conclusion that there has not been considerable elite circulation in Estonia (Kroos 2001). Especially large number of scholars have come to conclusion that in one way or the other, the former elite has been able to keep their position in society. Szelenyi and Szelenyi who have termed the phenomena the reproduction of elite theory, say that it takes place when the system change does not effect the personnel of the elite: people who were privileged in the past are privileged now.

Relatively arbitrary overviews of Estonian business elite shows that people that are in the leading positions today, have got engineering education.

More particularly, most of the scholars who have studied Estonian elite change after the breakdown of the FSU argue that despite of the limited amount examples of simple elite reproduction<sup>133</sup>, a major elite reproduction by conversion<sup>134</sup> has taken place in Estonia. As the intra elite circulation has allowed the key positions in Estonian society to be kept by the former *nomenclatura*, one can expect the post-1995 graduates of the institutions of higher learning in Estonia to start affecting the elite composition slowly but surely. As suggested by Savisaar in the previous section, there are signs that allow to suggests that Konrad and Szelenyi's 1979 vision is going to materialize in Estonia. Although the university

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<sup>132</sup> Elite circulation means that a revolutionary change at least at the very top of the social hierarchy takes place. In other words there are new people, recruited on the basis of new principles, that occupy the most important socio-economic positions. It is understood that the new elite can have three sources: (1) the former counter elite, i.e. organized opposition of previous system; (2) the fresh blood - snow whites, without any elitist past; and (3) members of former bourgeois or aristocratic families or home returning exile members (Szelenyi & Szelenyi 25).

<sup>133</sup> Simple elite reproduction takes place when people who were in command positions stayed where they were, i.e. those who occupy high positions currently were there already before breakdown (Szelenyi and Szelenyi 25).

<sup>134</sup> Elite reproduction by conversion can said to be have taken place when those who had a high social, political, cultural or economic positions before the breakdown belong to a different fraction of the elite now (Szelenyi and Szelenyi 25).



graduates who have lately got their degrees and have entered job market after 1995 cannot expect to move up the career ladder quickly, biological evolution will open the elite positions also for them.

## CONCLUSION

The paper started with the statement that even though universities are generally understood as important institutions that socialize people; (re)produce elite; transmit knowledge, skills, culture and values; produce new and apply existing knowledge; their role in social transformation is not very well researched or understood.

To fill the gap, higher education policy and ideology of SU as well as independent Estonia were outlined and a number of theories of soviet collapse and transition success/failure were assessed from the point of view of the role of (Estonian) universities in these.

As demonstrated, universities contributed towards the collapse of SU in a number of possible ways. Although they never took the position of main opposition structure and hardly ever stated that soviet rule was essentially illegitimate or irrational, they nevertheless increased the interest and desire for participation in political affairs. They were set up to legitimise Soviet rule but turned out to illegitimise it instead by low quality performance. Finally, it was stated that the most important role of Estonian universities that they performed before the restoration of independence was preserving of the Estonian culture and reproduction of national elite.

More particularly, Estonian universities were not at the front of the resistance movement and their personnel was controlled, academic freedom limited, curricular (including the hidden one) centrally determined. Rather than offering a counterhegemonic discourse against the official ideology, institutions of higher learning were to contribute through teaching and research to the legitimisation of soviet rule in Estonia. Although academic institutions were put into the centre of socialist project, they failed to produce the outputs at the quality that would have allowed the Soviet state to move from industrialization to post-industrialization. The more countries and individual companies depended on innovation and creativity, the larger the difficulties of the soviet modernisation model and possibilities to compete with the West turned out to be. It is reasonable to think that the higher education system, which was set up to support the forced industrialisation, had something to do with the difficulties of the system to produce economic progress and consumer satisfaction. That is, the defining features of soviet higher education - narrow specialisation, authoritative teaching and assessing methods, stress on factual knowledge rather than application and use of knowledge in an unanticipated circumstances - put some limitations to ability to innovate and possibilities to move the country beyond the third industrial age. Instead of actually being able to solve the problem of optimal planning, Soviet economists give up one by one all the defining features of socialism, confessed that they had been off-the-track and joined the mainstream. During perestroika, the best of them

tried to fix the soviet model but turned out to be the designers of the grand failure, instead.

There are reasons to believe that from the point of view of the restoration of independent Estonia, the fact that teaching took place in Estonian outweighs anything else. In other words, collaboration with the soviet regime structures allowed for preservation of the culture and nation. Institutions of higher learning kept Estonian language alive and reproduced local Estonian elite. Although further comparative research is needed to establish the (details of the) causal effect, it is very difficult to imagine that restoration of independent Republic of Estonia could have been possible without locally trained national elite, national language, culture and means to communicate these. Hence, the most important contribution of Estonian institutions of higher learning in restoration of independence does not seem to be direct role of braking down the soviet regime rather than preservation of Estonian nation.

It seems that the socialist legacy of underdevelopment of social scientists and the lack of public policy to do something about it, continues to affect the quality of social science and through this public policy in Estonia. Before there is a qualitative change in the understating of social scientists that what the politicians would need is not just ex-post description of what has happened in society. Rather, the role of academics should be the ability to offer policy solutions, descriptions of what are the pros and cons of the proposed policy and what are the policy options to solve the existing or avoid an emerging problems.

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**APPENDIX 1.**

Name of the institution during soviet times	Name of the intuition now	Year of est.	No. of doc. of sc.	No. of cand. of sc.	No. of academic staff members without an advanced academic degree	No. of students	Students / doc rate	Students / cand. rate	Students / (doc + cand) rate	Students / academic staff without degree rate
State Univ. of Tartu	Univ. of Tartu	1632	110	511	1261	7339	66.72	14.36	11.82	5.82
Tallinn Polytechnic Institute	Tallinn Technical Univ.	1936	43	454	950	8544	198.70	18.82	17.19	8.99
Tallinn Pedagogical Institute named after E. Vilde	Tallinn Pedagogical Univ.	1952	3	127	334	3058	1019.33	24.08	23.52	9.16
Estonian Academy of Agriculture	Estonian Agricultural Univ.	1951	18	157	353	3569	198.28	22.73	20.39	10.11
Estonian SR State Institute of Culture	Estonian Institute of Culture	1950	1	23	125	517	517.00	22.48	21.54	4.14
Tallinn State Conservatory	Estonian Academy of Music	1919	2	11	130	489	244.50	44.45	37.62	3.76

Academic staff working at the institution in the beginning of 1987  
 Students at the beginning of the academic year of 1985/86

*Based on Laas, 1989*

**APPENDIX 2. Sequence of generations**

Time period	Descriptive name of the generation	Explanation of the name/generation	Representatives of the generation group
1950s	a	optimism of restoration, belief in progress and scientific-technological revolution	individuals how had occupied the leading positions in the society by the end of 1970s
1962-68	a(d astra)	It seemed that it is possible to do anything within the ruling regime. What was not forbidden was allowed!	J. Allik, K. Põllu, J. Tooming, P.-E. Rummo, Ü. Vooglaid
1968 -	illusionists	Collaborators who were following the official line, tried to fix the system from within.	T. Kallas, K. Komissarov, V. Pohla, A. Pork, R. Tammik
	(per asper)a	Group that had to make compromises with coercive line due to their profession. They have separated private and professional life just as their words and real actions.	E. Hermaküla, M. Lauristin, P. Tulviste, M. Unt, T. Vint
	lost, disappointed	Reactionary group who's members became dissidents.	Adams, K.-I. Eller, Johnny B. Isotamm, L. Mäll, Paal

*Continues on the next page*

1972 -	victims of the wave	The group that was close to the "ad astra" generation at the end of 1960 and made their first steps and got their first emotions then. They hope for better times/new "ad astra" wave. To keep up their spirits they became hyperactive for a moment. They struggle at work, home, vacation, theatre, rings, organisations and bed.	Jakops, L. Lapin, T. Luts, R. Rannap, R. Veidemann
	pseudo-prostitutes	Indolent generation has indirect social connection with the "ad astra" generation but no emotional essence. Often their social attitude is described as pacifism: they do the minimum that university administration requires in order to keep floating and as little as possible to be free. They say that it is allowed to do nothing under any political regime. Indifference towards society does not allow them to become dissidents. They do not want to be creators but critics. They have changed the social function of alcohol, all that matters about the latter was quantity.	Ints, A. Juske, L. Priimägi, A. Raudsepp, T. Veispak
	b, tired	Generation that is tired from nothing. It is an impersonal tiredness of a century.	Danilov, E. Kipper, M. Taar, S. Tooming, M. Tõnuvere
1976 -	c, disco-jeans-culture	Generation that goes to discos and jumble markets. Individuals who will occupy the positions of economic elite, people that will bring into the economy small size entrepreneurship, free market, spontaneous elements. I.e. they will establish social order (including culture and rule of law) that is based on economic anarchism.	They do not have the honour to be mentioned

Based on Juske and Priimägi 1982.

**APPENDIX 3a. Evaluation of Estonian Research in Natural Science – the complete list**

Research field	Research project	Institution	Eval.	Rec.
<b>Molecular Biology and Genetics</b>				
	Identification of Genes Involved in Growth Autonomy of Human Hematopoietic Cells	Lab. of Ontogenesis UT; Inst. Of Molecular Cellular Biology, Estonian Biocenter, EAS	3	1
	Molecular Characterization of 2.4-D Plasmids in Local Bacterial Isolates	Lab. of Plasmid Biology, Dept. Of Molecular and Cell Biology, UT; Estonian Biocenter EAS	3	1
	Transposon-mediated Mobilization of cam (camphor) and oct (octane) Plasmids by Transposons of Degradative Plasmids	Lab. of Plasmid Biology, Dept. Of Molecular and Cell Biology, UT; Estonian Biocenter EAS	4	3
	Applied projects: I. An Artificial Microbial Consortium for Cleaning Waste Waters from Oil Sills. II. Enrichment of Wastewater Cleaning Stations with <i>Sseudomonas putida</i> . Biomass for Increasing the Efficiency of Biodegradation and Decrasing the Energy Demand of the Cleaning Process. III. Bacterial Consortium for Making and Protecting Silage. IV. Bacterial Biofertilizer "Psepu"	Lab. of Plasmid Biology, Dept. Of Molecular and Cell Biology, UT; Estonian Biocenter EAS	3	1
	Constrution of Inducible Eukaryotic Expression Vectors	Lab. of Oncogenesis UT; Inst. Of Molecular Cellular Biology, Estonian Biocenter, EAS	2	5
	Isolation and Characterization of the Plasmid-encoded Genes for Phenol Degradation. Studies on the Mechanism of Gene Activation in <i>Pseudomonas putida</i> .	Lab. of Plasmid Biology, Dept. Of Molecular and Cell Biology, UT; Estonian Biocenter EAS	4	3
	Studies on Molecular Mechanism of Functioning of Oncoprotein p53	Estonian Biocenter, EAS	4	3
	Cloning of the Human Ribosomal Protein Genes	Lab. of Gene Expression UT; Estonian Biocenter EAS	4	2
	Complexes of Nucleic Acids with Sequence Specific Ligands	Dept. Of Molecular Biology, Inst. Of Experimental Biology, EAS	2.5	2
	Molecular and Cellular Mechanisms of Action of nerve Growth Factor (NGF) and Factors Related to NGF	Lab. of Molecular Genetics, Institute of Chemical Physics and Biophysics	5	5
	Molecular Biology of Potato Virus and Studies on Their Resistance	Inst of Chemical Physics and Biophysics, EAS	4.17	5
	Regulation of Utilization of Carbon Compounds in Microorganisms Growing in Mixotrophic Conditions	Dept of Plant Physiology and Biochemistry	2.5	3
	Structure and Function of the Mammalian LINE Retroposons	Lab. of Gene Expression UT	4	5
	Intracellular Host-Parasite Interactions	Dept of Protozoology, Inst of Experimental Biology EAS	2	1
	Genomic Influences in Elementary Recombination and Mutagenesis	Dept of Molecular Genetics, Institute of Experimental Biology EAS	2.5	2
	Molecular Biology of Bovine and Human Papilloma Viruses	Lab. of Oncogenesis UT; Estonian Biocenter, EAS	3	3
	Structure & Function of Ribosomal Peptidyltransferase, Decoding & Ribosome Assembly	Inst. Of Chemical Physics and Biophysics, Estonian Biocenter	4	5
	Cloning, Characterization and Expression of Prochymosin Genes	Lab of Molecular Genetics, Inst of Chemical Physics & Biophysics, Estonian Biocenter EAS	3	1

Ecology				
	Air Pollution Impact on Coniferous Forests in Estonia	Station of Ecology UT	3.5	4
	Development & Modification of the ion Chromatographic Technique for evaluating environmental pollution	Inst of Chemistry EAS	n/a	3
	Fundamentals of Environmental Chemistry and Methods for Evaluating Environmental Pollution	Inst of Chemistry EAS	5	5
	Coenology, Ecohysiology and Population Ecology of Plants in Communities Under Ecological Management	Dept of Botany & Mycology, Inst of Zoology & Botany EAS	n/a	4.5
	Biology of Birds of Estonia	Dept of Zoology, Inst of Zoology and Botany EAS	4	4
	Structural and Functional Organization and Anthropogenic Dynamics of Terrestrial Ecosystems	Inst of Ecology & Marine Research EAS	3.5	5
	Evaluation of Geochemical and Biological Criteria for the Purpose to Reconstruct the Development on the State of Ecosystems	Inst of Ecology & Marine Research EAS	3	3.5
	The Dynamics of Geocomplexes under the Influence of Natural and Anthropogenic Factors on Estonian Coastal Districts	Landscape laboratory EAS, Tallinn Botanical Garden	3	3.5
	Optical Monitoring of Estonian Vegetation	Inst of Astrophysics & Atmospheric Physics, EAS	4.5	5
	Urban Ecology	Lab of the Environment, Tallinn Botanical Garden	1.5	1.5
	Dynamics and Structure of Plant Communities in the Boreo-nomoral Zone		n/a	3.83
Plant & Animal	Physiology			
	Hormonal Regulation of Lymph Formation and Haemolymphomicrocirculation	Dept of Animal Physiology, Inst of Experimental Biology EAS	1	1
	Parameters of the Reaction System of Photosynthetic Carbon Metabolism in Vivo	Lab of Biochemistry of Photosynthesis, Dept of Plant Physiology and Biochemistry UT, Inst of Experimental Biology	3	4
	Aspects of Insect Physiology	Dept of Zoology, Inst of Zoology and Botany EAS	3	3
	Leaf Photosynthesis and Influence of Ozone on Plant Productivity: Limitation and Regulation of Leaf Photosynthesis	Inst of Astrophysics & Atmospheric Physics, EAS	5	5
	Energetics of Ant Colonies	Dept of Zoology, Inst of Zoology and Botany EAS	2	2
	Biosynthesis of Flavonoids: Control Mechanisms and Relationships with Primary Metabolism	Lab of Plant Secondary Metabolism, Inst of Experimental Biology EAS	2	3
	Leaf Photosynthesis and Influence of Ozone on Plant Productivity: Response of Plants to Increasing Carbon Dioxide and Ozone	Inst of Astrophysics & Atmospheric Physics, EAS	3	4
	The Physiology & Biochemistry of Lignification	Dept of Plant Physiology and Biochemistry UT	2	3
	Role of Lysosomes in Early Development and in Tissue Differentiation in Vivo and in Vitro	Lab of Embryological Histogenesis UT	2	1
	Oocyte Maturation, Fertilization & Embryonic Development of Bisexual and Unisexual Vertebrates (Cyclostomes, Fishes & Amphibians)	Dept of Zoology & Zoological Museum UT	2	3

Taxonomy				
	Isoenzyme Variation & Phylogenetic Relationships in Selected Grass and Legume Genera	Dept of Botany & Mycology, Inst of Zoology & Botany EAS	4	4
	Plant Nematology: Taxonomy, Ecology & Evolution of Plant Parasitic Nematodes Including Host-parasite Relationships and Theoretical Aspects of Control	Inst of Zoology & Botany of the EAS	4	4
	Taxonomy & Protection of Baltic Higher Plants	Inst of Zoology & Botany, Dept of Botany and Mycology, EAS	2	2.5
	Taxonomy, Evolution & Distribution of Fungi	Dept of Botany & Mycology, Inst of Zoology & Botany EAS	4	5
	Systematics, Faunistics and Ecology of Some Invertebrate and Vertebrate Taxa in Estonia	Dept of Zoology & Zoological Museum UT	2	1
	Faunistics, Systematics, & Biogeography of Some Groups of Insects in Estonia & Adjacent Areas	Dept of Botany & Mycology, Inst of Zoology & Botany EAS	2	1
Marine Science & Limnology				
	(A) Structural and Functional Organization of Land Ecosystems & Their Anthropogenic Dynamics (B) Study of the Baltic Sea Ecosystem & Living Resources Aimed at Elaboration of a Scientific Basis for Their Usage & Protection	Dept of Marine Physics, Inst of Ecology & Marine Research EAS	3	3.5
		Dept of Marine Optics & Remote Sensing, Inst of Ecology & Marine Research EAS	3	4
		Dept of the Modeling of Marine Ecosystems, Inst of Ecology & Marine Research EAS	3	3.5
	Investigation of Biota in the Baltic Sea & Elaboration of Scientific Basis of its Management		3.4	4
	(A) Technological investigations, aiming at limiting the use of freshwater by major industries, like oil shale & food industry, & their waste production. (B) Studies of water quality formation of surface waters (C) Estimation of pollution flows between land, sea and atmosphere (D) Estimation of pollution flows between land, sea and atmosphere (E) Assessment of inland, costal and sea water quality, elaboraation of water quality criteria	Water Protection Lab, TTU	3.5	3
	Biota of the Baltic Sea Ecosystem. Variability of the Plankton & Benthos, Bioindication of the State of the Ecosystem, & Eutrophication	Dept of Hydrobiology, Inst of Zoology & Botany EAS	3	5
	Research Group of Lake Biology	Võrtsjärv Limnological Station	3.5	n/a
	Research Group of Hydrochemistry	Võrtsjärv Limnological Station	2	1
	Research Group of Ichthyology	Võrtsjärv Limnological Station	4	4
	Research Group of River Biology	Võrtsjärv Limnological Station	n/a	4
	Research Group of Biometrics	Võrtsjärv Limnological Station	n/a	1
	Antarctic Limnology	Tallinn Botanical Garden, EAS	3.5	2
	Long Term Changes & Local Extremal Environmental Situations in the Balitc Sea, Especially in Estonian Coastal Areas, & their Forecast as a Problem of Interaction of Different Scale Ecological, Hydrophysical & Biological Processes	Dept of the Baltic Sea / Inst of Thermo- & Electrophysics	5	2



Condensed Matter Physics				
	Solid State Theory	Lab fo Solid State Theory, Inst of Physics, EAS	3.5	4
	Investigations of Ionic Crystals & High Temperature Superconductors by Spectroscopic Methods	Lab of Physics of Ionic Crystals, Inst of Physics, EAS	3	3
	Exoelectron Mission, Crossluminescence & Energy Transfer in Ionic Solids	Lab of X-ray Spectroscopy, Inst of Physics, EAS	4	4
	Laser Spectroscopy at Low & Ultra Low Temperatures	Lab of Low-Temperature Physics, Inst of Physics, EAS	3.5	3
	Optical Helium Cryostats	Lab of Low-Temperature Physics, Inst of Physics, EAS	4.5	4
	High Resolution Optical Spectroscopy of Molecular Impurities in Solids	Lab of Laser Spectroscopy, Inst of Physics, EAS	3	3
	Disorder & Phase Transitions in Crystals Studied by Raman Spectroscopy	Lab of Laser Spectroscopy, Inst of Physics, EAS	2.5	2
	Spectral Hole Burning & Phonon Propagation in Crystals with Color Centres	Lab of Laser Spectroscopy, Inst of Physics, EAS	4	4
	Optical Spectroscopy at High Pressures	Lab of Laser Spectroscopy, Inst of Physics, EAS	4	5
	Four-dimensional Holography and Its Application for Ultrafast Optical Data Processing	Lab of Spectroscopy of Crystals, Inst of Physics, EAS	3	3
	Ultrafast Dynamics of Photoexcitations in Solids	Lab of Spectroscopy of Crystals, Inst of Physics, EAS	4	4.5
	(Sub)picosecond Time-Resolved Spectroscopy of Organic and Photosynthetic Systems	Lab of Spectroscopy of Crystals, Inst of Physics, EAS	3	2
	Spectral Hole Burning: Optical Dephasing in Glasses, Optical Memories, & Neural Networks	Lab of Laser Optics, Inst of Physics, EAS	3	3
	Mössbauer Spectra of Solids, Nanosecond Transient Phenomena	Lab of Nuclear Spectroscopy, Inst of Physics, EAS	3	3
	Investigations of Thin Films & Application of Thin Films in Sensor & Electroluminescence Devices	Thin Film Technology Group, Inst of Physics EAS & UT	3	3.5
	Radiation Physics of Dielectrics	Dept of Experimental Physics, UT	3	3
	X-ray Structural Analyses	Dept of Experimental Physics, UT	2	n/a
	Alkaline Earth Sulphides	Dept of Analytical Chemistry & Dept of Experimental Physics, UT	n/a	2.5
	Paleodosimetry	Dept of Experimental Physics, UT	n/a	n/a
	Electroluminescence Capacitors	Dept of Experimental Physics, UT	2	1
	Magnetic Resonance & Raman Scattering of High Temperature Superconductors & Related Topics	Lab of Chemical Physics, Inst of Chemical & Biological Physics, EAS	4.5	4
	Laser Optics & Spectroscopy	Lab of Chemical Physics, Inst of Chemical & Biological Physics, EAS	4	4
	Theory of Elementary Particles & Gravitation	Lab of Theoretical Physics, Inst of Physics, EAS	3	3
	Selected Topics in General Relativity & Gravitation	Dept of Astrophysics, Inst of Astrophysics & Atmospheric Physics, EAS	2.75	1
	Structure & Evolution of Galaxies & Their Environments	Inst of Astrophysics & Atmospheric Physics, EAS	3.5	4
	Study of the Large-scale Structure of the Universe, its Formation and Evolution	Inst of Astrophysics & Atmospheric Physics, EAS & International Centre for Cosmology	4.5	5

	Stmospheric Structure of Red Giants & Nonstable Stars & Their Chemical Abundances	Inst of Astrophysics & Atmospheric Physics (Tartu Astrophysical Observatory) EAS	3.5	4
	Physical Processes in Stellar Atmospheres & Envelopes	Dept of Astrophysics, Inst of Astrophysics & Atmospheric Physics, EAS	2.75	4
	Evolution of Low-mass X-ray Binaries & Presupernovae	Dept of Theoretical Physics & Astrophysics, UT	4	4
	Massless Wave Equations. Superfield Methods in the Theory of Gravitation and Elementary Particle Physics	Dept of Physics, TTU	2	2.5
<b>Atomic, Molecular &amp; Optical Physics</b>				
	Investigation of Vibronic Interaction & Vibrational Relaxation in Molecules Isolated in Supersonic Jet & Low Temperature Matrices	Lab of Chemical Physics, Inst of Chemical & Biophysics, EAS	4	4
	Instrumentation for VUV and UV Spectroscopy & Its Applications	Lab of Equipment Development, Inst of Physics, EAS	2	1
	Spectroscopic Diagnostics of Plasmo-Chemical Processes in the Active Media of Discharge-Pumped Gas Lasers	Lab of Laser Technique, Inst of Physics, EAS	4	5
	High Resolution Laser Spectroscopy of Jet-Cooled Molecules	Lab of Laser Technique, Inst of Physics, EAS	3	4
	Development of High-Efficiency Excimer Liser Systems	Inst of Physics, EAS	3.5	4
	Study of Materials Using the Method of Photoelectron Spectroscopy	Dept of Experimental Physics, UT	2	1
<b>Mathematical Sciences</b>				
	Numerical Methods for Ordinary & Partial Differential Equations	Chair of Numerical Analysis, UT	3	4
	Ill-Posed Problems	Chair of Numerical Analysis, UT	4	4
	Weakly Singular Integral Equations	Chair of Numerical Analysis, UT	4	4
	Linear Topological Properties of Spaces of Sequences or Operators	Chair of Numerical Analysis, UT	3	4
	Optimal Design of Plastic Structures & Investigation of the Behaviour of Non-elastic Beams, Plates & Shells	Chair of Theoretical Mechanics, UT	4	4
	Differential Geometry & Applications	Chair of Algebra & Geometry & Lab of Applied Mathematics, UT	4.5	4
	Investigation of Algebraic Structures & Their Representations	Chair of Algebra & Geometry & Lab of Applied Mathematics, UT	2.5	2
	Teaching Programs for Computerized Exercises of Basic Courses in Mathematics	Lab of Applied Mathematics, UT	4	4
	Topological Algebras	Lab of Applied Mathematics, UT	2.5	3
	Investigation, Elaboration & Application of Computational Statistical Models	Lab of Applied Mathematics, UT	3	4
	Estimation in Multivariate Statistical Models	Dept of Mathematical Statistics & Laboratory of Applied Mathematics, UT	3	4
	Rate-spaces in the Theory of Summability	Dept of Mathematics, Estonian Agricultural Academy	2	3
	Applied Mathematics	Dept of Mathematics, Inst of Cybernetics, EAS	3	n/a
	Equations of Movement & State of Mechanic Systems, & Optimal Design of Plastic Elements of Constructions	Chair of Foundations of Mechanics, TTU	3	3

	Applied Methods of Mathematical Analysis, Algebra & Geometry	Dept of Mathematics, TTU	3	4.5
	Acts over Monoids	Tallinn Teacher Training Institute	3	3
	Geology of Useful Minerals	Inst of Geology, EAS	n/a	n/a
	Precambrian Geology	Dept of Precambrian Geology, Inst of Geology, EAS	3	3
	Geophysical & Structural Geology	Dept of Geophysics & Structural Geology, Inst of Geology, EAS	n/a	1
	Recent Movements of the Earth's Crust in Estonia	Geodesy group, Inst of Astrophysics & Atmospheric Physics, EAS	n/a	1
	Fundamentals of Environmental Chemistry and Methods for Evaluating Environmental Pollution	Dept of Environmental Chemistry, EAS	3	3
	Investigation of the Chemical Composition of Dictyonema Argillites, Their Behaviour and Possibilities of Their Utilization in the Mining Process of Phosphorites	Dept of Environmental Chemistry, EAS	2	1
	Chemistry & Geochemistry of Oil Shales. Fundamentals of Oil Shale & Shale Oil Processing	Dept of Oil Shales & Shale Oil, Inst of Chemistry, EAS	4.2	4
	Paleozoic Geology	Dept of Paleontology-Stratigraphy and Lithology, Inst of Geology, Section of Paleozoic Geology, EAS	n/a	n/a
	Quaternary Geology & Geomorphology, Plus Dating & Analytical Facilities	Section of Cenozoic Geology, EAS	n/a	n/a
<b>Meteorology &amp; Hydrology</b>				
	Large-Scale Atmospheric Circulation & Cloud-Cover Climatology	Dept of Atmospheric Physics, Inst of Astrophysics & Atmospheric Physics, EAS	3.5	3
	Estonian Radiation Climate & Energy Balance of the Ground Surface	Inst of Astrophysics & Atmospheric Physics, EAS	4	3.5
	Atmospheric Physics, Marine Research	Dept of Geophysics UT	3	3
	Remote Sensing of the Atmosphere & the Earth's Surface	Space Research Lab of the Inst of Astrophysics & Atmospheric Physics, EAS	4	4
	Hydrosphere Studies & Geochronology	Inst of Geology, Lab of Hydrogeology, EAS	2	4
	Studies of Regime, Underground Water Balance & Exogenous Geological Processes, Estimation & Forecasting of Geological Conditions in Estonia	Estonian Hydrogeological Department Geological Survey of Estonia	2	4
	Technology Related & Natural Environment Pollution Studies	Insts of Chemical Physics & Biophysics, EAS	3	3
	Soil Geochemistry of Estonia	Tallinn Geological Dept, Geological Survey of Estonia	2	4
	Spectrometry of Electrical Mobilities & Sizes of Aerosol Particles & Charged Clusters	Air Electricity Lab, UT	4	4
<b>Biochemistry</b>				
	Computerized Chromatographic Analysis of Nonstationary Substance Flows	Lab of Instrumental Analysis, Inst of Chemistry, EAS	4	4
	Biorganic Chemistry of Proteins	Lab of Biorganic Chemistry, Inst of Chemical Physics & Biophysics, EAS	3	1.2
	Preparation, Characterization & Utilization of Red Algae Galactans & Sorbents on Their Basis	Lab of Physicochemical Investigations, Inst of Chemistry, EAS	1.7	1
	Specificity & Mechanism of Action of Enzymes & Receptors	Lab of Biorganic Chemistry, UT	5	5
	Investigation of Macromolecular Structure by Atomic Models	Inst of General & Molecular Pathology, UT	2	1

	Investigation of Methods for Separation, Purification & Analysis of Lectins & Blood Plasma Proteins	Lab of Analytical Biochemistry, UT	1	1
<b>Organic Chemistry</b>				
	Quantitative Experimental, Theoretical, Informational & Calculative-Prognosticative Approach to the Structure & Environmental Effects on the Reactivity and Formation Enthalpies of Organic Compounds	Dept of Organic Chemistry & The Lab of Chemical Kinetics & Catalysis, UT	2	2
	Synthesis of Pheromone Compounds, Elaboration of Pheromone Materials	Lab of Organic Synthesis, UT	2	2
	Investigation of Synthetic Methods for Biologically Active Compounds	Lab of Bioorganic Chemistry, UT	3	3
	Development of Highly Reactive Cold Setting Polycondensation Resins	Lab of Polymer & Food Research, TTU	3	3
	Synthesis & Physico-Chemical Fundamentals of Purification of Unsaturated Hydrocarbons & Aroma Compounds	Inst of Chemistry EAS	n/a	2
	Protonation of Weak Organic Bases in Strong Acidic Media	Inst of Chemistry EAS	1	1.5
	Electrophilic Haloalkylation of Alkenes as the Basic Process for Synthesis of Biologically Active Terpenoids	Inst of Chemistry EAS	n/a	2
	Optimization of Chemical & Mass Transfer Processes Using Oscillating Temperature	Inst of Chemistry EAS	3	3
	Asymmetric Chemical Synthesis, Development & Investigation of Chirons for Medical & Natural Product Chemistry	Inst of Chemistry EAS	3	4
<b>Analytical, Physical &amp; Inorganic Chemistry</b>				
	Synthesis & Development of the Technology of Surfactants on the Basis of Fat & Protein Wastes. Surfactants of Biological Interest	Dept of Organic Synthesis & Technology, EAS	1	1
	Magnetic Resonance	Lab of Chemical Physics, Inst for Chemical Physics & Biophysics, EAS	4	3
	Background of Heavy Metals in the Environment of Estonia - Methods & Chemical Monitoring	Lab of Environmental Analytical Chemistry, Dept of Chemistry, TTU	1	1
	Electronic & Atomic Process in Semiconductors. Conductive Polymers	Optoelectronics Materials Lab, Dept of Physical Chemistry, TTU	1	1
		Lab of Chemical Kinetics & Catalysis, UT	3	3
	Experimental & Theoretical Investigation of Structural & Solvent Effects on Acid-Base Equilibria in Gas Phase & Solution	Dept of Analytical Chemistry, UT	4	4
	Electrochemistry	Dept of Inorganic Chemistry, UT	4	n/a
	Influence of the Chemical Composition & Crystallographic Structure on the Metal/Electrolyte Phase Boundary & on the Electrochemical Kinetics of Various Practically Important Reactions	Dept of Inorganic Chemistry, UT	1	1.5
	Electrosynthesis & Properties of Analytically Active Conducting Polymer Films	Lab of Electrochemistry, Dept of Inorganic Chemistry, UT	n/a	n/a
	Electroanalytical Methods & Complex Systems for Testing Oxygen Content, pH & Polluting Components of Environment	Working group on Electroanalysis, Dept of Inorganic Chemistry, UT	3	3.5

EAS - Estonian Academy of Sciences

Based on Swedish Natural Science Research Council 1992.

**APPENDIX 3b. Evaluation of Estonian Research in Natural Science - systemised findings**

	Evaluation	Recommendation
Total no. of research projects submitted for evaluation	153	153
No. of univ. research projects submitted for evaluation	52	52
No. of EAS research projects submitted for evaluation	101	101
No. of N/A grades	30	23
No. of all univ. research projects with N/A grade	3	4
No. of all EAS research projects with N/A grade	27	19
No. of all research projects that got a grade (N/A exempted)	123	130
No. of all univ. research projects that got a grade (N/A exempted)	49	48
No. of all EAS research projects that got a grade (N/A exempted)	74	82
Mean grade of all research projects (N/A exempted)	3.46	3.41
Mean grade of all univ. research projects (N/A exempted)	2.79	2.91
Mean grade of all EAS research projects (N/A exempted)	3.90	3.70
Mean grade of all research projects (N/A = 1.5)	3.07	3.12
Mean grade of all univ. research projects (N/A = 1.5)	2.72	2.80
Mean grade of all EAS research projects (N/A = 1.5)	3.26	3.28

*Based on Swedish Natural Science Research Council 1992.*

**APPENDIX 3c. Evaluation of Estonian Research in Natural Science - explanation of grades**

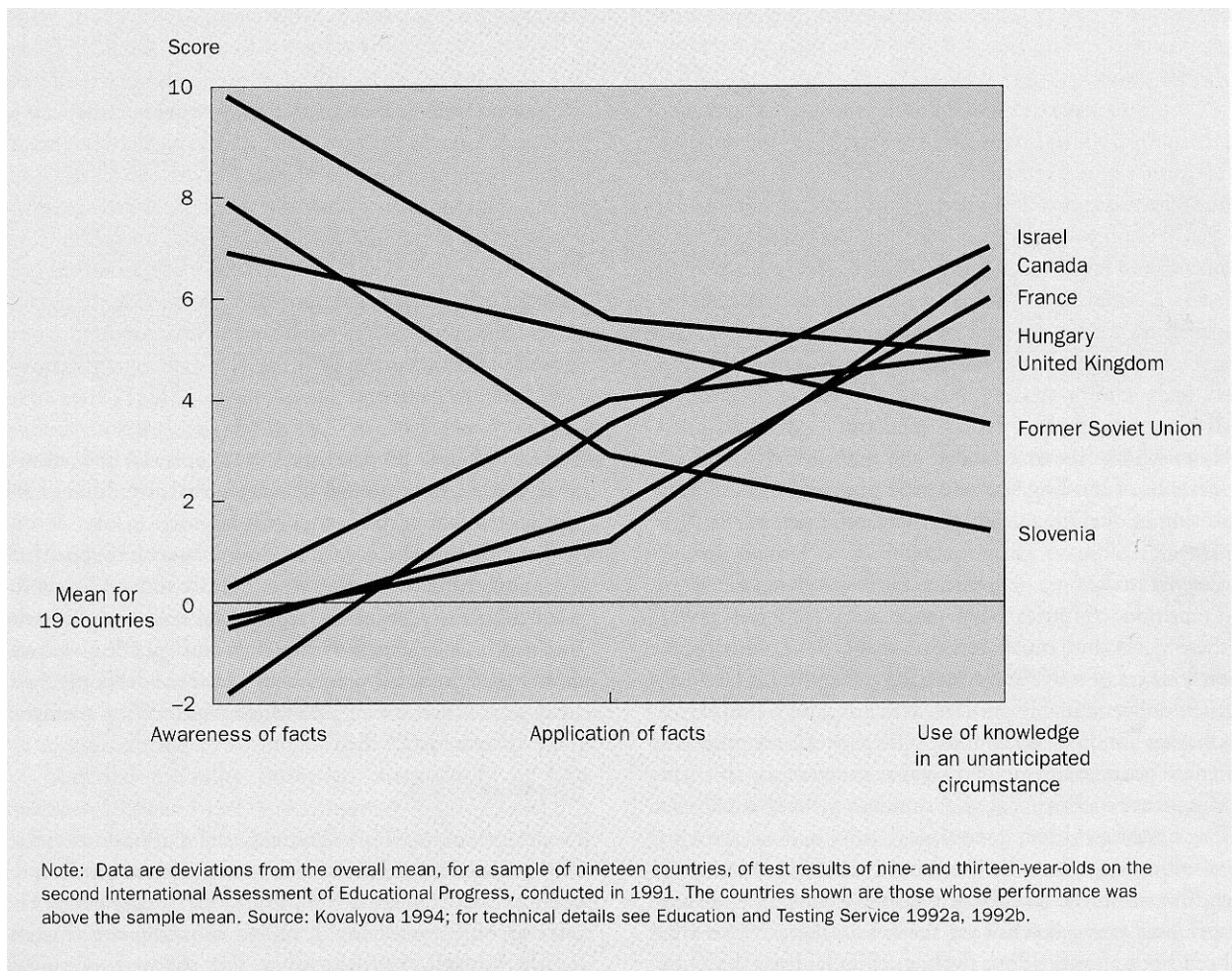
	Grade	Explanation
Excellent	5	Research at a very high international level; of great international interest with broad impact and with publications in internationally leading journals; the researchers are among the leading figures in the field
Very good	4	Research at a high international level; of international interest with impact within its sub-fields and with publications in internationally leading journals; the researchers are among the leading figures in the subfield
Good	3	Research at a good international level with publications in internationally well-known journals; the researchers have a good international reputation within their subfield
Fair	2	Research that only partly is of good international standard and only partially published in well-known international journals
Poor	1	Research of insufficient quality

**Recommendation for further support**

Most strongly recommended	5
Strongly recommended	4
Recommended	3
Questionable	2
Not recommended	1

Based on Swedish Natural Science Research Council 1992.

**APPENDIX 4. Science and mathematics test performance of children in selected transition and established market economies.**



*Based on World Bank 1996: 125.*

**APPENDIX 5. Summary and main findings of the role of university in braking the old**

Theory	Did Estonian universities contribute towards the collapse of SU?	Main point/finding
Essentialists	NO but other universities in the west did.	Individuals connected to Estonian institutions of higher learning did not take the stand that soviet economic policy suffered from knowledge problem or that the Marxist-Leninist ideology was essentially illegitimate, unchangeable and unreformable.
The Marxist corrective	?	There is evidence that soviet economist went through a process of giving up one by one the defining features of socialism so that at the end there was not much left of it. Further research is necessary to establish whether the same happened with Estonian economists.
The role of Opposition	NO	The available evidence does not support that students or the teaching staff of Estonian institutions of higher learning engaged in open oppositional activities. In case of students the problem is that the history writing has become part of politics in Estonia. In case of teaching staff it does not seem possible that the vast majority of them were deliberately oppositional. Three explanations are offered: (i) effective prevention of the soviet regime structures; (ii) by definition successful resistance meant that one had to operate while not being caught with evidence (iii) lack of cultural capital / separation of research and teaching.
Perestroika & Gorbachev Factor	NO but Russian universities did.	(i) Gorbachev was the first SU leader who had got a proper higher education. (ii) The failure of Gorbachev to reform the Soviet economy and society was the failure of the ideas and policy advice of the best Soviet economists and his closest advisor.

*Continues on the next page*



Modernisation	YES	<p>Two explanations are possible.</p> <p>(i) Socialist regimes failed to take advantage of the historic possibility to further rationalise and legitimise their rule. Leaving the large proportion of well educated population out of the political process put an extra pressure to the socio-political situation together with the Soviet emigration policy. Soon before long, the policy of "no voice, no exit" lead to the events of 1989/91.</p> <p>(ii) Should it be the case that intellectuals were indeed in the process of taking the power over, it was the failure of graduates of Soviet/Estonian institutors of higher learning to rationalise and legitimise soviet rule.</p>
Modernity & Competition with the West	YES	<p>The higher education policy and the method of instruction, especially contributed towards the stagnation. Instead of leading the Soviet society to a new developmental level higher education together with the R&amp;D sector trained narrow minded engineers who failed to compete with the West in the development of information technology and once they got close to power contributed towards its dissolution.</p>
The legitimation crisis theory	YES	<p>Legitimation of soviet rule in terms of economic progress and goal-rational mode failed. Once the elites lost faith in the system, SU collapsed.</p>
Unresolved Russian Question	YES	<p>The most important role of Estonian universities that they performed before the restoration of independence was preserving of the Estonian culture and reproduction of national elite.</p>
Policy choices made	YES and NO	<p>The reformers/politicians used foreign rather than local social scientists to design the post-communist reforms because of the underdevelopment of social sciences in the FSU.</p> <p>Yet, the local public servants from various fields have affected the policy making in their respective areas.</p>

Path-dependency	NO	Underdevelopment of social sciences in the FSU has left a qualitative effect on Estonian social scientists, their understanding of policy processes and possibilities to influence and contribute to it.
Elite change	NO (in short run) YES (in long run)	The intra elite circulation that has allowed the key positions in Estonian society to be kept by the former members of elite, one can expect the post-1995 graduates of the institutions of higher learning in Estonia to start affecting the elite composition only with the passage of time. As suggested by Savisaar in the previous section there are signs that allow to suggests that

**APPENDIX 6. General Comments and Recommendations by Swedish Natural Science Research Council**

- (i) Gradual integration of the institutions of the Estonian Academy of Sciences and universities. This integration should allow:
- the most modern ways of thinking to penetrate via students into industry and the entire society;
  - the brightest students to be brought into contact with the researchers and kept them within academia;
  - decrease the teaching load of the academics connected to the institutions of higher learning and increase it for those of Academy of Sciences
- (ii) Urgently "normalize" the age structure of academic personnel. This change should allow:
- students of various kinds as well as younger researchers to make up the bulk of people "visible" at any given institute;
  - to increase the number of Ph.D. students;
  - to decentralize the decision-making
- (iii) Increase the flow of graduate students by
- shorting the undergraduate studies (Suitable age for the completion of a doctorate should be around 25/27);
  - modernizing the system by which a position or a promotion is given for researchers (As the Estonian scientific community is too small to ensure a non-biased treatment of the applicants, it was recommended that the selection committees are made up of foreigners who make the decision solely based on academic merits).
- (iv) Simplify the structure of academic institutions in order to gain economically as well as professionally.
- (v) Distinguish between applied and basic research and fund them from appropriate sources.
- (vi) Give special treatment (similar to infant industry) to the scientific areas that were for political reasons either underdeveloped or not developed at all during the Soviet era.
- (vii) Internationalize/westernize by:
- changing the publication policy from Russian and Estonian into English;
  - learning to write and give lectures in English;
  - writing about issues/problems that the international scientific community is interested in (Being up-to-date what is discussed in latest scientific journals becomes important);

- strengthening the scientific libraries;
- changing the patterns of scientific collaboration
- introducing foreign exchange programmes to enable young researchers (PhD students as well as post-docs) to travel abroad in order to undertake research there, and financial means to attract them to return (i.e. to reverse the brain-train);
- nordification (This should include participation in Nordic cooperative projects as well as offering cheap Estonian facilities to different categories of Nordic scientists for the organization of academic conferences and inter-Nordic PhD courses);
- Updating the communication system (introducing electronic computer networks and faxes);
- Contract research for hard currency.

**APPENDIX 7. Institutions providing higher and higher professional education, 1997-2001**

	Academic Year				
	1997/98	1998/99	1999/2000	2000/2001	2001/2002
Number of institutions	31	33	33	39	33
Public universities	6	6	6	6	6
Private universities	4	5	8	9	10
State applied higher education institutions	8	9	8	8	7
Private applied higher education institutions	13	13	11	12	10
Number of students	33334	38834	46840	51474	53593
Public universities	22231	24740	30633	34511	37292
Private universities	3291	4561	6641	7737	7913
State applied higher education institutions	3285	3616	3810	4000	3831
Private applied higher education institutions	4527	5917	5756	5226	4557
Number of graduates	4039	5032	5763	6910	
Public universities	2912	3495	3950	4596	
Private universities	246	514	790	853	
State applied higher education institutions	453	489	520	632	
Private applied higher education institutions	428	534	503	829	

*Based on Statistical office of Estonia 2002: 170*

**APPENDIX 8. Continuation of education at higher professional, diploma and bachelor courses, 1997-2001**

	Academic Year				
	1997/98	1998/99	1999/2000	2000/2001	2001/2002
Number of admitted students to higher professional, diploma or bachelor courses	9368	10543	13055	14749	14010
Number of last year secondary school graduates	10753	10440	11302	11063	10158
Number of last year secondary school graduates of whom continued at higher professional, diploma or bachelor courses	5158	6222	6931	6922	6296
Share (%) of high school graduates who continued at higher professional, diploma or bachelor courses	48	59.6	61.3	62.6	62

Based on Statistical office of Estonia 2002: 172

**APPENDIX 9. Continuing education rates**

- 56.5 percent of the students that completed basic education in 2000/2001 continued at secondary school (Statistical Office of Estonia 2002: 21);
- 62 percent of the students that completed secondary school in 2000/2001 continued at higher professional, diploma or bachelor courses (Statistical Office of Estonia 2002: 172);
- There were 3852 more students who started a higher professional, diploma or bachelor course than graduated from secondary school. (As "only" 62% of the students of institutions of tertiary education came directly from secondary school, 38% were "re-enterers to the education "market" (Statistical Office of Estonia 2002: 172);
- Gross rates of tertiary education are extremely high in Estonia. In 1998 it was according to some sources 32.9 percent among the age group of 19-24 (UNICEF 2000: 151) and according to other source as high as 63.2 percent among the age group of 18-21 and 63.8 percent among the age group of 19-22 (Statistical Office of Estonia 2002: 24).

**APPENDIX 10. Estonians' perceptions of the importance of education in Oct. 1994**

How important is education for	Percentage of the population that found it important or very important	Percentage of the population that found it very important
- development of the Estonian economy	96.5	67.8
- self development	94	50.6
- Estonia's convergence with the developed nations	92.8	57.3
- development of national culture	88.2	43.1
- finding employment	81.3	35.8
- guaranteeing income	46.8	25.8

*Based on UNDP Estonian Human Development Report 1995: 33.*



**APPENDIX 11. Economically active population by level of education in 1999**

Based on International Labour Office Statistical yearbook 2000, reprinted in European Commission 2001: 68.