

MUTUAL LEARNING PROGRAMME:

HOST COUNTRY DISCUSSION PAPER - FINLAND

**Towards More Transparency in Finnish Forecasts – Revealing High
Demand in Social and Health Services - and then what?**

Peer Review on The Ageing Population and
Educational Choices

Finland; Helsinki 14 and 15 June 2010

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1 QUICK SUMMARY

Finland has experienced a roller coaster in terms of economic, employment and restructuring developments, particularly since 1990 – and continues to do so. This results from Finland's export dependence, very aged demographic profile and limited workforce resources. As a result, restructuring, and maintaining cutting edge productivity, innovation and workforce sustainability are highly relevant themes for Finland.

Among the most important challenges for the Finnish economy and labour market is the imminent generation change, starting in full effect around 2005 and peaking around 2020. As Finland is a low immigration country, the country is likely to face severe shortages of labour in future, alongside increasing pressure on public finances. These trends are likely to impact on local authorities most of all because the delivery of education, social and health care services is largely in their hands.

The first signs of recovery from the global crisis surfaced in Finland in the last two quarters of 2009, investments were on the rise at the end of the year, and the first positive growth figures have been projected for 2010, after a historical downturn of -7.8 GDP in 2009. As an export economy, Finland is highly dependent on the recovery of the global markets, which of course means delays and risks for the Finnish recovery.

In 2008, the Ministry of Employment and Ministry of Trade and Industry were amalgamated, on the initiative of the new Centre-Right Government, into a new Ministry of Employment and Economy (MEE). On the basis of the evaluation of the existing foresight system, and led by MEE, a new forecast system was designed and commissioned by a consortium of the Ministries of Employment and Economy, Finance, Education and Social and Health Affairs.

The key goals, following the cue of the evaluation, were to (1) ensure better transparency of the method of forecasting on the one hand, and to (2) clarify and streamline the roles of the stakeholders and actors involved in the forecasting process and achieve better independence of research in forecasting.

The choice of method fell on the application of *Applied General Equilibrium models* (AGE), or *Computable General Equilibrium* (CGE), or *Monash models* as they also are called, which have become a standard tool for the analysis of structural policies in some countries and international research organisations. Their use has been prompted by economic developments and the growing need for quantitative policy analysis.

The first forecast with the new model (entitled VATTAGE) was carried out this spring. Its main outcome of this forecast was a confirmation that Finland is moving towards a service economy, with a very high future demand of social and health services – VATTAGE predicts an additional requirements of 120 000 workers in the sector. Based on this, the reflection of those findings into educational decisions has only just started.

The major constraint and difficulty in adapting to this challenge lies probably in the ability of Finnish municipalities to implement relevant changes in education content and intake as well as service planning. This might prove difficult because Finland has, at the same time, almost a world record demographic change, a major rise in social and health demand, and significant restructuring in the municipalities which are mainly responsible for these services.

The major success factors lie, potentially, in the better transparency, methodological development and further elaborations and scenarios of the model and the collaborative culture of the stakeholders and actors of the Finnish forecasting process – both concerning the specific process now reviewed, and also the broader collaboration network of forecasting in Finland.

2 LABOUR MARKET SITUATION IN THE HOST COUNTRY

Finland has experienced a real roller coaster in terms of economic, employment and restructuring developments, particularly since 1990 – and continues to do so. This is because Finland is highly dependent on exports and the global market, with limited workforce resources and one of the most aged populations in the world. Exports account for about half of Finnish GDP, therefore restructuring and maintaining cutting edge productivity, innovation and workforce sustainability are highly relevant themes for Finland, and becoming increasingly relevant in the next decade.

In 1992 Finland was hit by the worst depression in the post-war period, which – in a paradoxical way – helped Finland to enter the 2008 global economic crisis with somewhat milder consequences than were experienced in many other countries, particularly concerning the banking sector. But the prospect of a protracted global depression poses a serious threat for the – now evident, but still precarious - recovery of the Finnish economy and labour market.

The most comprehensive structural change in Finnish industry has been in the paper and forestry sectors, and in related industries and subcontractors – the backbone of Finland's industrial modernisation since the country's independence 1917 and until the 1990s, when the baton was passed to ICT-technology, epitomised by the global success of Nokia.

The restructuring of the paper industry has to do with the ongoing shift of production close to the resources in South America and Far East in particular, but also due to growing competition from Russia. Already before the onset of the current financial crisis, Finland was witnessing major redundancies in regions reliant on paper-mills and their spinoffs for employment. The crisis here resembles the closure of coalmines and shipyards in many European countries a few decades ago.

The depression of the 1990s brought about a severe banking crisis, which made the Finnish banking sector more cautious about risky investments abroad and kept national debt one of the lowest in the EU. As a result, Finland was able to avoid a banking and monetary crisis in 2008, which was characteristic for the onset of the economic downturn in many other countries. Since the 1990s private loan rates have remained at a very low level, and there has been no housing and mortgage crisis.

In the ongoing economic downturn, all branches of the economy have been adversely affected, first construction and then other industries. The depression has not yet spilled over to private consumption in a major way.

One of the most important challenges for the Finnish economy and labour market is the imminent generation change, (i.e. the retirement of the big post-war generations, starting in full effect around 2005 and peaking around 2020). Combined with low levels of immigration – which will remain low whatever measures are taken - Finland will likely be facing severe shortages of labour, once the global crisis is over. Also, pressures on public spending has been growing all through the last decades, triggering major structural changes also in the public sector, especially in local and regional government.

Local government is a very important and powerful actor Finland, as it is in all of the Nordic countries, and what happens to local government has tremendous implications for Finland. And it just happens that the core theme of the Peer Review, ageing population, educational choices – with a focus on social and health services – and tradeoffs with other sectors – concerns local government, significantly. The municipalities are responsible for social services and basic health, and through joint-municipality regional collaboration, also for special health care (and the education system with the exception of universities). It is also noteworthy that the municipalities are presently undergoing the most extensive and profound restructuring of their organisation and boundaries in the history of Finland – posing a major challenge for containing the structural change in the workforce.

Public expenditure is currently about 50% of GDP (which is 171 billion). Public expenditures are divided between state, local government and social security funds (work pensions and social insurance institution of Finland). Local government is the biggest sector deciding on public expenditures (about 20% of public expenditure), and within these, social and health sectors account for about two thirds.

On the average local government expenditure accounts for at least 70% of the budget.. When an ageing society demands more social and health services the demand cost implications falls first and foremost on the municipalities, who themselves have an aged workforce. All in all, local government employs about 20% of the total workforce, and is a cornerstone of women's high full-time employment rate in Finland.

The present labour market and economic situation in Finland can be characterized as mildly optimistic but precarious. The most significant policy choices and measures concerning the containment of the economic crisis have been made earlier in 2008 and 2009, by introducing recovery measures, cutting taxes, securing loans, finances and also the stability of the banking sector.

The first signs of recovery from the global crisis surfaced in Finland in the last two quarters of 2009. Investments were on the rise at the end of the year, and first positive growth figures have been projected for 2010, after a historical downturn of -7.8 GDP in 2009. As an export economy, Finland is highly dependent on the recovery of the global markets, which of course means delays and risks for the Finnish recovery. The projections of the recovery rate vary, the gloomiest being those issued by the by the Ministry of Finance of Finland (1.1% growth for 2010 and 2.1% for 2011, and the most optimistic being by Pellervo Economic research PTT (3.2 % for 2010 and 2.5% in 2011). Most others, like the Bank of Finland, or the Research Institute of the Finnish Economy ETLA, are somewhere in between these. Inflation has remained very low, with a slight increase in the first quarter (0.1%) and consumer confidence has improved, being higher than in January and a year ago.¹

In terms of the labour market situation, there have been no major restructuring cases in Finland in the first quarter of 2010, the most sizeable and dramatic ones, mostly in the paper industry, but also in the ICT-sector, occurring in 2008-2009, and also well before the global crisis. Perhaps indicative is however, that Nokia, the epitome of Finnish ICT-success, has continued to downsize its labour force in Finland, even in its key production plants in Salo, the most recent (25.3.2010) being the dismissal of 268 employees from the more routine-end of mobile-phone production.²

Unemployment has been on a higher level in the first quarter of 2010 than in the first quarter of 2009, now at 9.2 %, but it seems that the increase in unemployment is slowing down or has stopped in the first quarter in most unemployment groups, except among the long- term unemployed. Most concern has been around the high and rising level of youth unemployment (25.7% for 15 – 24 years old). The forecasts of average unemployment for 2010 vary from 9% to 10.3% in most predictions.

In February, the employment rate was 66.4 per cent, which was 1.6 percentage points lower than the previous year. Adjusted for seasonal and random variation, the trend of the employment rate was 67.3%.

¹ www.stat.fi/til/kbar/2010/03/kbar_2010_03_2010-03-29_tie_001.html

http://vm.fi/vm/en/01_main/index.jsp

www.etla.fi/eng/index.php

www.bof.fi/fi/julkaisut/euro_ja_talous/talouden_nakymat/index.htm?year=2010

www.ptt.fi/site/?lan=3&page_id=57

² Helsingin Sanomat 25.3.2010

In terms of educational attainment, by the end of 2008, a total of 2,903,000 persons in Finland had attained post-comprehensive level educational qualifications at upper secondary general schools, vocational education institutes, polytechnics or universities. Sixty-five per cent of the population aged 15 or over had attained an educational qualification. The share of population with educational qualifications increased by two per cent from the year before. The share of population aged over 15 with educational qualifications was highest in Kauniainen at 79 per cent. The data in these statistics comply with the municipal division valid on 1 January 2009. Persons having only completed the basic level of education, (i.e. comprehensive school, middle school or elementary school), numbered 1,532,000.

Upper secondary level qualifications were held by 39 per cent and tertiary level qualifications by 27 per cent of the population aged 15 or over. Forty-one per cent of the holders of upper secondary level qualifications were men and 36 per cent women, whereas tertiary degrees were held by 24 per cent of men and 30 per cent of women.

Table 1: Population aged 15 or over by level of education and gender, 2008

	Population, total		Men		Women	
		%		%		%
Total	4,435,152	100.0	2,156,478	100.0	2,278,674	100.0
Basic education or less (ISCED 2 or less)	1,531,994	34.5	752,984	34.9	779,010	34.2
Population with educational qualifications	2,903,158	65.5	1,403,494	65.1	1,499,664	65.8
Upper secondary education/Post-secondary non tertiary education (ISCED 3/4)	1,709,962	38.6	884,436	41.0	825,526	36.2
Tertiary level (ISCED 5/6)	1,193,196	26.9	519,058	24.1	674,138	29.6
ISCED 5 B programmes	482,084	10.9	187,807	8.7	294,277	12.9
ISCED 5 A Medium programmes (Bachelor level)	356,420	8.0	162,178	7.5	194,242	8.5
ISCED 5 A Long/very long programmes (Master level)	321,172	7.2	148,701	6.9	172,471	7.6
Second stage of tertiary Education (ISCED 6)	33,520	0.8	20,372	0.9	13,148	0.6
Licentiate's degree	9,590	0.2	5,725	0.2	3,865	0.2
Doctor's degree	23,930	0.6	14,647	0.7	9,283	0.4

Source: Education Statistics, Finland

3 POLICY MEASURE

3.1 Abundance of forecasting in Finland

In Finland there is an abundance – to a point of being fragmented - of forecast, anticipation and restructuring methods and activities on national/central, regional and sub-regional levels, which by their very widespread nature, risk being fragmented. All key players are active concerning this: the government and parliament, ministries, regions, municipalities, the social partners and the scientific community. Foresight, anticipation and restructuring activities have focused on some critical themes in the last decade: Education and training needs, the demand for labour, changes in qualifications and the competences of the labour force, changes in different business fields and clusters and business life in general, technology foresight, demographic structures, globalisation impacts and innovation systems. From the beginning of the millennium more and more attention has been paid to the cooperation of different actors and agencies and the utilisation of the results of anticipation projects and activities. Despite the fact that Finland can be characterised as a consensual and cooperative society, there is plenty of room for improvement in the collaboration of the producing forecasts and translating them into decisions and actions.

On the central/national level Finnish forecast/foresight/anticipation actors and tools include: the Futures Committee in the Finnish Parliament, National Foresight Network of the Ministries, Foresights and restructuring activities of the Ministry of Employment and the Economies, Anticipation and forecasting in education – by Ministry of Education using VOSE and MITENNA, the VATTAGE –model of Government Institute for Economic Research (VATT) (the subject of the present Peer Review), Education Intelligence Foresight System of the Confederation of Finnish Industries (EK), Finnsight 2015 Science and Technology Foresight, ETLA (Research Institute of Finnish Economy) Economic Five Year Regional Forecasting System, Tekes (Funding Agency for Technology and Innovation) foresight systems, VTT (Technical Research Centre of Finland) foresight systems and SITRA (Finnish Innovation Fund) foresight systems.

At the regional and- local level of anticipation systems include: Foresight system of the Finnish Economic Development Centres (TE-Centres) and the restructuring activities of the Employment and Economic development offices (TE-offices, former Employment offices), Regional cluster modelling and foresight systems, Surveys on the Need for Workforce and Training (TKTT Foresight Model), plus other sub-regional special foresight processes.

Table 2: Summary of forecast institutions, methods and characteristics in Finland

Institution	Forecast method	Key characteristic and outputs
The Futures Committee in the Finnish Parliament	Expert and Stakeholder Networking, Committee work	Dialogue of stakeholders, Government and Parliament, Reports, 5 – 15 year forecast
National Foresight Network of the Ministries	Interministerial cooperation of various forecasts in sectors	Forum for discussing the results of the anticipation work carried out in the administrative sectors.
Foresights and restructuring activities of the Ministry of Employment and the Economies	Various qualitative and quantitative methods	Long term forecasting on central level, mid-to short on regional
Ministry of Education using VOSE and MITENNA	Various qualitative forecast methods of competences and skills needs	Short to long term forecasting of educational needs and combining to quantitative forecasts of the

		national economy and labour markets
VATTAGE –model of Government Institute for Economic Research (VATT)	Applied General Equilibrium Model (AGE)	Quantitative model for long-term forecasts of the development of the economy and labour markets
Education Intelligence Foresight System of the Confederation of Finnish Industries (EK)	Series of anticipation projects anticipating changes in the industrial environment	Qualitative long term forecasting including networking, workshops, Delphi surveys, virtual platforms
Finnsight 2015 Science and Technology Foresight	Joint foresight project of the Academy of Finland and Tekes, the Finnish Funding Agency for Technology and Innovation. The project was carried out in 2005-2006	The core of the foresight project comprised ten expert panels, each of which was composed of twelve experts producing forecasts
ETLA (Research Institute of Finnish Economy) Economic Five Year Regional Forecasting System	Nationwide regional model, which is linked to the global economy.	This model produces five-year projections for regional GDP for both production and employment in 30 industries on a twice-yearly basis.
Tekes (Funding Agency for Technology and Innovation) foresight systems	Various quantitative and qualitative forecasts on technology and innovation	Key focus of Tekes is technology foresight and its impact on technology and innovation policy in Finland.
SITRA (Finnish Innovation Fund) foresight systems	Expert networking and analysis	Foresight topics are (1) Future of welfare and everyday living (2) The future of work life (3) The future of the public sector (4) Multiculturalism (5) The future of environmental technology
VTT (Technical Research Centre of Finland) foresight systems	A broad set of foresight activities related to high-end technology and innovation	Key projects in its Nordic co-operation have been (1) Foresight Biomedical Sensors, (2) Nordic ICT Foresight and (3) Hydrogen Foresight Project.
Surveys on the Need for Workforce and Training (TKTT Foresight Model),	Interactive network based regional foresight model using qualitative and quantitative methods	Short-to-mid term forecasts of labour market demands on a regional-local level

3.2 Strategic questions for forecasting

On the strategic long-term there is a broad consensus about investing in innovation and R&D, where Finland already is one of the leading investors in the world, in order to secure global competitiveness. There is also broad consensus on the need to increase develop productivity in all sectors, particularly in public services, but less consensus about how to achieve this, and still fewer clear cut strategies for tangible means of achieving it.

In light of the potentially shifting labour force demand in favour of health and social care sectors, one of the key questions here is how to increase the productivity of local authorities, the key actor to produce delivery social and health services to ensure that such services are delivered most effectively, thus allowing for an optimal distribution of scarce

labour resources. I will return to this in discussing the results, constraints and success factors in this paper.

The question on public sector productivity is highly relevant for the Peer Review topic, the VATTAGE-forecast, ageing population and educational choices, since one of the key results of the forecast was to reveal a huge gap concerning demand of social and health services, and the prospects of sufficient supply and other means of dealing with the gap. The main provider of social and health services is local government, which currently employs about 430 000 persons, of which most are in the health sector, 130 000, social sector 114 000 and education 115 000.

There is also a rising political temperature around how to deal with the demographic challenges (ageing), altogether on the whole. At the end of 1990s there was a broad consensus about a “wake up call” in the Finnish society via a broad Age Programme, which has also been a subject of a Peer Review. The Programme aimed - via information and good practice dissemination - to raise awareness of the imminent generation change in the labour markets, and to raise the average real age of retirement.

The Programme was deemed rather successful in evaluations. Several post Age-Programme surveys in Finland pointed to a more positive attitude towards aged working groups and a slight diminishing of age discrimination. Attention to work-ability and age management also increased. A clear positive trend was also in the employment rate of 55-59 and 60-64 age groups. Average retirement age rose from 58 in 1989 to almost 60 in 2003 (target being an increase by 2 – 3 years). The age programme was also helpful in paving way to later decisions of flexible pension age and pension accumulation incentives to stay longer in working life. These developments cannot be attributed only to the Age Programme, but the independent evaluation concluded that it had a positive impact.

Since then the road has been rougher. The National Government and social partners agreed in 2009 on preparations for extending working lives and rising the statutory retirement age from 63 to 65. Two committees were established, the so-called Rantala-committee addressing the retirement age and Ahtela-committee to make recommendations on the quality of working life (enhancing workability, occupational health, early interventions in disabilities, but also transitions in and accessibility of education). Both committees were due to report in January 2010. The Rantala committee failed to reach unanimous recommendations, and was discontinued. The Ahtela committee was more successful and submitted its proposal on the first of February 2010, and got a mildly positive, but mixed reception. The Ahtela committee recommended more investment in quality of working life, early intervention in workplace health and well-being, occupational health development, dissemination of good practice and also investing in skills development.

An OECD assessment³, commissioned by the National Government, was mildly positive, indicating that the proposals made sense, but were insufficient to address the challenges of demographic change. ETLA, the Research Institute of Finnish Economy⁴, also criticized the proposal for being vague. With these rather inconclusive results, the National Government proposed to continue on a tripartite basis to continue finding solutions to prolonging working-life careers and rise the pension age. But with new parliamentary elections approaching, this tough bundle will be left for the new Government to tackle. The need to find solutions to prolonging working-life careers has been so clearly demonstrated by various forecasts, so the pressure will keep rising. The solution calls for a reasonable balance between the “stick and carrot”, (i.e. rising pension age and investing in quality of working life).

³ www.government.fi/ajankohtaista/tiedotteet/tiedote/en.jsp?oid=289590

⁴ www.etla.fi/

3.3 Evaluation and review of the Long Term forecasting model

A long tradition on anticipation has been the use of the Long Term (LT) model, a macroeconomic model for assessing the impact of economic growth on employment, which has been used in several comprehensive assessments by the former Ministry of Labour.⁵ The time-frame has been long, the last forecast covered 2005 to 2025. This was the forerunner of the VATTAGE-model, and it was the subject of the EU Peer Review 2006, so it is worth briefly describing it, and the discussion and criticisms of it, because it provides the background for adopting the new model, VATTAGE.

The goals of the LT model were twofold. First the model anticipates labour supply and demand in different sectors over 30.

The supply of labour was determined through demographic forecasts (source: Statistics Finland) and labour market participation rates. The demand side of the LT model used data on production, labour productivity, hours worked and the number of employed individuals. The interaction of the two sides of the model generates projections of demand and unemployment. Various expert input and sensibility analysis was used in the forecast. The forecast was disaggregated to the regional level and sectors of the economy/occupations. This was done interactively with regions, social partners and sector specialists.

A distinction was made between the 'basic' scenario (which describes the most probable development of the labour market), and the 'target' scenario (which describes the 'optimal' development if effective policies are pursued to achieve high levels of employment and productivity with high quality jobs in the context of sustainable development). The forecasting results of the LT model were used as inputs for the model with regard to anticipating the requirements of the occupations, discrepancies in available competences and skill needs. The LT model includes scenarios and calculations on alternative development paths for GDP, productivity and employment.

The forecast provided a first step for setting intake targets for education in-take and other educational planning on central and regional levels, first set by government. The manner and extent to which these targets are implemented varies between educational sector. In the vocational education and training sector, decision-making is decentralized, and providers must match local needs within the framework laid down by the Ministry of Education. The polytechnic sector, by contrast, is more centralized, with 3-year performance agreements with the Ministry of Education, which specify intake targets. The universities are more autonomous, and their 3-year performance agreements with the Ministry of Education are specified on outputs (degrees) rather than intakes.

The Peer Review meeting, held in Finland in September 2006, examined the LT-forecasting method and the anticipation of educational needs. The Finnish Ministry of Labour hosted the Review, with inputs from the Ministry of Education and the Finnish National Board of Education. Twelve peer countries participated in the Peer Review: Austria, Bulgaria, Cyprus, France, Germany, Iceland, Latvia, Lithuania, Luxembourg, the Netherlands, Norway and the United Kingdom.

The Finnish independent expert (Juha Honkatukia, Research Director, from VATT, Government Institute for Economic Research) was the independent expert in this Peer Review and he pointed to some weaknesses in the forecasting model. Since Honkatukia,

⁵ Työvoima 2025. Työpoliittinen tutkimus 325/2007. (*Work Force 2025 – Full employment, high productivity and good workplaces as basis of well-being in a diminishing working age population. Ministry of Labour, in Finnish*).

and his teams forecast with the new VATTAGE model, which is the subject of the present Peer Review, it is worth noting the key points made at this meeting:

- There is a need to make the underlying assumptions more explicit (he cited here the example of the EU Working Group on Ageing Populations – AWG – which adopted a similar supply-side approach to growth);
- There is a risk of mixing demand and supply side elements in the model in the absence of a clear behavioural model linking the two sides;
- And there is a need for the demand side of the model to incorporate sectoral forecasts, taking account of factors such as terms of trade and competitiveness;
- Some issues relating to the micro-macro links are implicit in the model. In particular, some consideration needs to be given to how world markets are taken into account in the model;
- Also assumptions about sectoral changes may have implications for many markets;
- The scenarios in the models may not take account of market effects and adjustment mechanisms;
- The distinction between targets and forecasts (e.g. with regard to sustainable development) is not always clear in the model, and the relationship between supply and demand is not clear.

Questions by Peer Countries concerning the LT-model ranged from asking about the ability of the model to contain external or internal shocks, changes in the quality of labour, variations in immigration levels, variations in productivity and how accurately – ex post - has the model in reality predicted changes, plus others. In general terms, the model has been fairly accurate in its long-term (10-20 year) predictions, but also some bigger changes occurred than anticipated.

Many Peer Countries described their forecasts as holding a weaker role in the decision making process, for instance as a basis for educational planning, as was picked up from the Finnish way, and could not foresee such a high level of consensus and collaboration, as was apparent as a basis of the Finnish process. There was also a discussion on what kind of organization should be responsible for forecasting labour market and skill needs – should it be an ‘internal’ governmental responsibility (as it was in Finland); the responsibility of a semi-independent public agency (as in Cyprus or Germany), or contracted out to independent providers (as in the UK or the Netherlands)? All of these approaches were seen as having different strengths and weaknesses. This question actually foreshadowed what took place in Finland after the Peer review of 2006 concerning forecasting.

In 2008 MEE commissioned researchers from ETLA to make an evaluation of the LT Forecasting model and to make recommendations for improvement. The evaluation concluded that:

Labour market forecasts have been made since the beginning of the 1990. Compiling of the forecasts has not been methodologically oriented, and thus consistency and transparency has been unsatisfactory, despite the fact that the actual results of the work have been for the most part accurate. The ways of managing the forecast process and the roles of stakeholders were also in need of improvement, according to the evaluation. There is a great demand for forecasting in the public sector, but at the moment it is fragmented and uneven. Improving the reliability, usability and transparency of forecasting calls for an economic equilibrium model, with well documented and constantly maintained databases and also research. The evaluation is here referring to the AGE-models (Applied General Equilibrium Models, of which the subject of this Peer Review, VATTAGE in an application). Forecasting should also contain regional development, energy- and environmental questions. One should separate calculating the basic forecast and the modelling and elaborations on the one hand, and the operative preparation and forecast work and

implementation on the other. This former aspect could be best done by commissioning a unit concentrating on research, while the latter could be done as a commissioning consortium and by the collaborative network. This should be done on a sustainable, long term basis. The work could be commissioned by the funders – the Ministries commissioning the forecast - and by a working group with key representatives for ministries.

3.4 The new forecasting model (VATTAGE) and its implementation

The new VATTAGE model was used for the first time this year (2010) for forecasting in Finland.

In 2008, the Ministry of Employment and the Ministry of Trade and Industry were amalgamated, on the initiative of the new Centre-Right Government, into a new Ministry of Employment and Economy (MEE).

On the basis of the evaluation, and led by MEE, a new forecast system was designed and commissioned by a consortium of the Ministries of Employment and Economy, Finance, Education and Social and Health Affairs.

The key goals, following the cue of the evaluation, were to (1) reach greater transparency in the method of forecasting on the one hand, and to (2) clarify and streamline the roles of the stakeholders and actors involved in the forecasting process and achieve better independence of research in forecasting.⁶ The idea was to first get a more “pure” quantitative baseline forecast, and then make different scenarios by changing the variables and by including external information, like expert opinions and political decision scenarios, affecting the variables.

The former was to be achieved by adopting a certain well-established forecasting method, which would, hopefully, overcome some of the key shortcomings of the old forecasting model.

The choice of method fell on an application of Applied General Equilibrium models (AGE), or Computable General Equilibrium (CGE) models as they are also called, which have become a standard tool for the analysis of structural policies in some countries and international research organisations. Their use has been prompted both by developments in the economy, but also on the growing need for quantitative policy analysis. The analysis of actual policy options mandates the use of numerical methods, but there are several other reasons to suggest the use of AGE models in particular. Chief among these is the applicability of models that rely on explicit optimisation on the analysis of welfare impacts of structural policies. The model has been used to study the effects of tax policies and environmental policies on the economy. The model can also be used to study scenarios concerning the driving forces of economic growth and employment. The model is suitable for a long-term model, not for short term, and acute changes.

The idea was, as far as the author of this discussion paper understands, to adopt a state-of-the-art, and also tried model, which would have a clear behavioural (hypothesis on consumer and business behaviour for instance) model inbuilt in order to establish in a clearer, more transparent, and repeatable way, the relationships between demand and supply. The old way of calculating the forecast, albeit producing reasonably good forecasts, was deemed too idiographic, opaque, and not-so-easily repeatable, and including too much speculative input from a wide range of stakeholders participating in the process – making it impossible to disentangle, in a transparent way, which facts come from where. There was a goal to initially do a rather ‘pure’ forecast, without ‘political’ variables), and then use this as a platform to introduce variations and scenarios.

⁶ The description is based on the VATT- VATTAGE documents and interviews with PATKET-consortium chairman, research director Heikki Räisänen from MEE, VATTAGE research director Juha Honkatukia from VATT and government advisor Ville Heinonen from the Ministry of Education.

This brings us to the second goal of the revision of the model, i.e. clarifying and streamlining the roles of the stakeholders and actors involved in the forecasting process. Formerly the forecast was made 'in-house', by experts in the Ministry of Employment, in close collaboration with a large group of people from other ministries and other stakeholders.

Clarity and independence was aimed at by creating a clearer distinction between commissioning and producing the forecast. This was done by making the consortium and its working group the commissioner of the forecast, and VATT (Government Institute of Economic Research) as the agency performing the study.

The consortium is called PATKET (Finnish acronym for 'commission consortium of long-term labour and education need forecasts') consisting of representatives from the Ministry of Employment and Economy (chair) and the Ministries of Finance, Education and Social and Health Affairs, altogether about 10 people in the core group. The consortium is purposefully limited to four ministries in order to keep matters more streamlined. In the earlier forecasting process over a 100 people from a wide range of stakeholders were involved, which was thought to be too cumbersome.

The broader cooperation in the new forecast setting is handled via the Government Foresight Network, which is an interministerial forum for cooperation and exchange of information on issues relating to all anticipation work. All ministries are involved in forecast and anticipation activities relevant to their appropriate administrative sector. The Government Foresight Network is a forum to discuss the results of the anticipation work carried out in the administrative sectors. Appointed by the Prime Minister's Office, the Network's term lasts until the end of the Government's term of office. The Network includes members from all ministries, and its presidency rotates among the ministries.

4 RESULTS

The VATTAGE approach relies on macroeconomic forecasts, which are used for the early years (until about 2015) of the scenario, and population and age-related expenditure forecasts, which are used for the whole scenario period (until 2025). According to the draft paper by Honkatukia et. al. from VATT, prepared to the Peer Review⁷, the future development of the structure of the economy is determined by the forecasted trends for productivity and export demands, as well forecasts for public demands stemming from our historical analysis, from statistics for the period 2005-2008, and from OECD and IEA forecasts for global market prices. Use has also been made of available Finnish industry-level forecasts especially in the case of key export industries (ETLA).

The main macroeconomic assumptions in the scenario are shared with other medium term forecasts like the Ministry of Finance and the EU Ageing Working Group study on the effects of ageing on the economy.

According to the scenario, the economy starts recovering from the recession in 2010 and 2011, and by 2015, employment has returned to the pre-recession growth path. These assumptions are, of course a matter of high unpredictability. As with the AWG scenarios, with aggregate employment starting to deteriorate during the latter half of the decade, growth can only stem from capital deepening and productivity growth.

Results cover the time span between 2004 and 2025, the base year for VATTAGE model being 2004, which in itself was a rapid growth year, so adjustments have been made to even this out. Although changes in the production structure seem rather minor, the future development affects greatly on the employment structure

According to VATTAGE forecast the changes in the employment structure (share of economic sector of employment) will change between 2005 and 2025 as follows:

Table 3: Share of employment by economic sector in Finland 2005 - 2010

Sector	Share in 2005 (%)	Share in 2025 (%)
Energy	0.5	0.4
Construction, trade and transport	31.5	33.2
Other societal services	5.2	4.9
Social services	7.5	10.4
Health services	7.1	9.8
Public administration and defence	14.3	14.5
Finances and business services	10.5	10.1
Industry	18.0	12.4
Primary production	5.3	4.4

As indicated in the table above, it is evident that the major shifts are the increase in social and health, and the decrease in industry.

The result has been disaggregated to the regional level of Finland and the process of interpreting and implementing the results has just started with meetings and workshops, as

⁷ Honkatukia, J, Ahokas, J. and Marttila, K. (2010) Forecasting Demand for Labour with and AGE.model in Finland (draft for Peer Review).

well as also the linking the results to educational in-take and other planning forecasts. These processes will take the rest of 2010.

The forecast with VATTAGE was done for the first time this year, and such comprehensive forecasts are not planned to be commissioned every year, but most likely at a few year intervals, with probably more focussed or thematic forecasts in between. This remains still quite open as is the decision of the PATKET-consortium.

The main outcome of the VATTAGE – forecast was a confirmation that Finland is moving towards a service economy, with a very high future demand for social and health services – how high depends on the calculations used, the scenarios differ from VATTAGES predicted need of 120 000 by 2025 to about half of that in Ministry of Social and Health calculations. 120 000 is a big number in the Finnish context – translated linearly to the UK, France or Germany it would mean a need of over a million new workers in these sectors, but one has to remember that there was already an increase of almost 90 000 employees in these sectors in the last 15 years.

Whatever the exact number needed in these sectors, it is clear that the need will be significant, and Finland has a limited set of alternatives to contain this. If the demand is 120 000, it means absorbing two whole age cohorts (now around 67,000) in these sectors alone, which is of course unthinkable, regardless of the extent to which the training offer could be extended. Which brings us to difficulties and constraints.

5 DIFFICULTIES AND CONSTRAINTS

The forecasting method, process and results, which are the subject of this Peer Review are by no means something completely new or surprising. The general difficulties and constraints of forecasting and translating this into decisions and actions have existed before the present setup, and have perhaps been alleviated in some instances, but by no means in all. Depending on the reading of the new model and the new setup for forecasting one can arrive at a more optimistic or critical assessment.

One difficulty concerning the evaluation and discussion of the model and the forecasting activity and steering educational choices, is that the VATTAGE model has been used only very recently and for the first time in its present form and we are in fact looking at a pilot phase, where the forecasting process – leading up to educational demand forecasts - has only started. The procedure followed here is very much the same that was in place before VATTAGE, namely first making a forecast of the economy and labour markets, and then, in a collaborative network of the Ministries (especially the PATKET-consortium), and the regions and social partners, using this as a baseline to make educational in-take, and other plans and decisions. This process will take the rest of the year 2010.

The first reaction to the initial results came from industry⁸ – and it was rather critical, insisting that the importance of industry in terms of employment and economic development was underestimated, and that the views of employers in the manufacturing sector had not been heard in the exercise.

Similarly, the regions argued that their views had not been taken into account well enough. The regions have traditionally had an important role in assessing the labour market situation and educational needs and translating them into education provision. As it was stated above, the forecast result has been disaggregated to the regional level, and the process of interpreting and accommodating the results has just started.

These criticisms probably reflect the experience of the earlier way of preparing the forecast, which was highly participative and the different stakeholders could have input in the forecast at different stages. It was this blurred process that the reform wanted to clarify. It will be a challenge for the new process to regain the high level of cooperation and trust of the former process.

Based on the VATTAGE-forecast, the processing of the results has only just begun, and there have already been forums and workshops for stakeholders, nationally and regionally, they will continue. The translation of the forecast into education plans and provision has also just started, so perhaps the reactions are somewhat premature.

But they also reflect the serious fact that there will probably be fierce competition for the young generations in particular, and for workers in general in the future in Finland. The race has only just begun, and a new era is dawning.

As mentioned above, the main outcome of the VATTAGE is that Finland is moving towards a service economy, with a very high future demand of social and health services. This result is not surprising or new. The same prediction has been reached in the updated forecasts of the former LT Forecast model.

There might be merit in the VATTAGE model used in arriving at these – unsurprising – forecasts, which can include increased transparency, more dynamism, better behavioural hypotheses, repeatability, continual methodological scientific development, among others. There is an uneasy gut-feeling not being an economist, but a sociologist, of having such a

⁸ CEO of Forest Industries Timo Jaatinen, and economist Simo Pinomaa from the Confederation of Finnish Industries, as reported by Kauppalehti 13.4.2010

complex subject and model in one package, with a claim of making forecasts – particularly linear ones - in the modern turbulent world. So far only two different scenarios have been made in VATTAGE – a higher and lower level of increase of demand in social and health service demand, and another with different levels of immigration. Scenario-work has only just started with VATTAGE.

There is also uneasiness about the very core assumptions of the 'behaviour' of the actors in the equilibrium model (i.e. consumer as searching for maximum benefit, the companies for maximum profit etc.),. but I leave it for the specialists to debate on the depths of the assumptions and their credibility. Still questions exists about how the model can contain many variables which are relevant for forecasting, like changes in attitudes and values towards work (affecting choices and recruitment) or changes in the deeper 'psychological agreement' concerning work (affecting commitment to work and working careers), among others.

The most interesting question about the results is after all the so what question – the what now – because with high probability we are facing a serious challenge how to contain the rising demand for social and health services.

Which brings the author of this discussion paper to one of the main difficulties and constraints concerning the RESULT of the forecast, the rising demand for social and health services.

In the beginning of this paper it was stated that local government is a very important and powerful actor Finland, as it is in all of the Nordic countries, and what happens to local government has tremendous implications for Finland. Expenditures of municipalities on social, health and educational services account for at least 70% of their budget on the average. So when an ageing society means increased need for more social and health services, the demand falls first and foremost on municipal services – which themselves have an aged workforce profile. All in all, local government employs about 20% of the total workforce, and is a cornerstone of women's high full-time employment rate in Finland. On top of this, the municipalities are in the middle of the biggest restructuring in the history of Finland in terms of amalgamations and service arrangements.

So we have, concurrently, almost the most significant demographic ageing profile in the world, a major increase in demand for social and health care services, and historical turmoil in the municipalities that are mainly responsible for these services. It is hard to predict success in dealing with these challenges in the middle of such turmoil. On top of all this, also the regional level in Finland has been restructured under the present government term, which does not make matters easier. The regional level has important tasks in planning and resource allocation, but it is not as important as local government.

Finland has had a very fragmented municipal structure –around 450 local authorities in a country of 5.2 million, and this has – in a rather painful process – been by 2010 brought down to about 340, still a rather far cry from the situation in Denmark where the number of local authorities has been reduced from almost 300 to under 100. There are understandable reasons, not least geographical, for Finland not being able to reduce the number very much further, but overall this fragmentation puts pressure on the ability to contain the challenges.

What is probably more important than local authority mergers – which can increase the economic performance of municipalities with economies of scale and rationalisation – is the need for better productivity via service innovations, dissemination of good practice and decoupling the service chain. It is also important to tap into the resources of a broader collaboration and competition network – private and not-for-profit suppliers, and the citizens themselves as co-produces. A case in point, concerning social and health care – is shifting more to care in the community, home care and using volunteers, peers and family members to support living at home until old age.

In order to realise these productivity potentials, innovation, and new collaboration and work cultures are needed from all stakeholders and actors in connection with the rising demand for social and health care.

Some major constraints emerge in relation to this. Finland has no significant hope of tapping into immigration, although it can play a part. Further, recruitment, particularly to the health sector, is already experiencing rather serious problems, both concerning doctors, but particularly nurses and support staff. This has to do with unsocial working hours, old fashioned hierarchies, and work stress - ,to mention a few⁹. Work in the health care sector has so far been considered rather attractive among the young generations, but the values concerning work are changing, and old fashioned, stressful and rigid workplaces will be losers in future competition for the young generations. The attraction of work in the health care sector has already deteriorated in many countries, as has work in the education sector, which in Finland continues to enjoy significant popularity.

The point here is – without being exhaustive – that the measures to contain the rising demand in health and social work – and the consequences for other sectors, too – are so complex and multi-faceted, and call for such a new level of collaboration of a wide range of stakeholders, that one wonders if not more effort towards this aspect of adaptation is warranted.

⁹ Pitkänen et. al. Moni-ilmeiset rekrytointiongelmät. Työ-ja elinkeinoministeriön julkaisuja 15/2009. (*Multi-faceted Recruitment Problems. Ministry of Employment and Economies Publications 15/2009*)

6 SUCCESS FACTORS AND TRANSFERABILITY

The major success factor, underpinning the forecast and the activities henceforth, is that there already is a highly consensual and collaborative culture in place to fall back on, prior to the VATTAGE-exercise. Whatever the shortcomings of the initial phase, there is a high probability of self-adjustment in the latter phases. The model itself, in the narrow sense, should be quite well transferable because it has already been used in many other countries. The constraints come from availability of data, differences in goals and work cultures, societal structures and the degree of collaboration between key stakeholders, key Ministries, and also with the regions.

The new model and process had two goals in mind:

(1) To reach better transparency of the method of forecasting on the one hand, and to (2) clarify and streamline the roles of the stakeholders and actors involved in the forecasting process and achieve better independence of research in forecasting.

The former was to be achieved by adopting a certain well-established forecasting method, which would, hopefully, overcome some of the key shortcomings of the old way of forecasting, described above in the earlier Peer Review and the evaluation. Clarification and independence was to be achieved by a clearer distinction between responsibilities for commissioning and producing the forecast. At this stage, the new process has meant a more limited role for the broader network of stakeholders. The success of the model in this respect, besides the merits of the model itself, will to a great extent depend on 'educating' the stakeholders in understanding and using the model in their own work practice. A rather critical phase is probably the production of different scenarios, which would include more 'political' factors in the input and constraints of the calculations.

Transferability of the former LT model was discussed in the former 2006 Peer Review, and the points raised probably contain important aspects also concerning the present Peer Review. Many countries shared similar underlying labour market needs to those which the Finnish forecasting models addressed (and similar constraints, such as an ageing population), although potential transferability was also, in several cases, limited by different social and institutional infrastructures, which stemmed in some cases from longstanding historical factors, and in others from major recent upheavals.

For several countries, it seemed to be difficult for institutional reasons to use forecasts to 'steer' the intakes to the educational system, and the emphasis would be more likely to be on the indirect use of forecasts in providing advice and guidance to (potential) students. Similarly, it was clear that the Finnish approach depended on a high level of cooperation and joint working between the ministries and authorities responsible for labour market issues on the one hand, and those responsible for education and training issues on the other; it was deemed harder to achieve such effective collaboration in some member states. Furthermore, in some countries the notion of orienting

educational supply to labour market needs was less well established than in Finland; and the underlying philosophy remains oriented towards serving the study preferences of individual students in the education system. It was felt that in some countries the utility of the approach would be very sensitive to the importance (and direction) of net migration flows, which played a relatively minor role in the Finnish context. It is highly probable that very similar aspects are relevant concerning the present Peer Review concerning transferability.

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Heikki Räisänen, PATKET-consortium chairman, research director from MEE,

Juha Honkatukia,, research director from VATT

Ville Heinonen, government advisor from the Ministry of Education.

ANNEX 2: SUMMARY TABLE

Labour market situation in the Host Country
- Recovering from global shock and a historical downturn of GDP - Recovery threatened if global recovery is slow because of high dependence of industry exports - Major restructuring challenges in industry, particularly in paper and forestry and services, and public services in local government linked to demographical change
Key features of the policy measure
- A new dynamic equilibrium model, AGE, adapted in Finland for forecasting economy and labour markets (named VATTAGE) - Aimed to achieve more transparency, reliability and also theoretical development - A structure for commissioning the forecast, separating the client from the organisation carrying out the work (to ensure greater independence)
Results
- The first forecast reveals – and confirms – that Finland is shifting to a service economy, with a particularly high demand in social and health care services - The translation of this message into educational measures has only just started
Difficulties and constraints
- The demand cannot be met by either new generations or increased education, or immigration – it has to be met by rising productivity in the public sector, particularly the municipalities - The main constraint is probably related to the ability of municipalities – the major provider of social and health services – to contain the changing demand, because they are in the middle of a historical restructuring themselves, coupled with financial pressures
Success factors and transferability
- The main success factor is probably the consensual and collaborative forecast and adaptation culture among the key actors in forecasting and translation into action - Finland also has a rich forecasting environment beyond the VATTAGE-exercise - The AGE model itself, in the narrow sense, is transferable – with the limitations of data available in the respective countries – but the broader collaboration and goal setting is more challenging to achieve or adopt