



SPECIAL COMMISSION ON FUTURES

(Meeting held on April 20, 2022).

THE CHAIR.— With a quorum present, the meeting is called to order.

(The time is 14:12).

—This is a formal meeting of the Special Commission on Futures, but we have invited other legislators who have shown interest in the specific subject that brings us together today. So we are very glad to have you with us.

First of all, we welcome the representative of the World Bank, Dr. Celia Ortega, who, as you all know, has from the very beginning been very willing to collaborate with the work of this commission. We have joint projects, which we will keep talking about later. And one of the first concrete contributions that the Bank offered to bring into our work is precisely a study that its author, the economist Ignacio Apella, is going to present to us today. He is Argentine but also feels very Uruguayan, as he has told us time and again, and he is very interested in being here.

We are referring to a work of which you have a summary, and which I know has reached your offices. It is a very interesting piece of work, done for Uruguay, titled “Just in Time. Aging, Technological Change, Skills, and Labor Regulations in the Uruguay to Come.” So we wanted the chance to hear the author himself present it to us on this occasion, and for all of us to stay in contact, as we have always said, since this kind of connection does not necessarily have to go through the commission in a formal way. The idea is that we get to know people who are working on these topics and who can make contributions. All those who have let us know they are willing to contribute have shown themselves ready to talk, naturally, with each of you individually, if necessary.

We have one hour and fifteen minutes to listen to this presentation, and afterward we will receive the Counselor for Education and Science of Finland.

Without further ado, and of course giving special thanks to the legislators for their presence, I give the floor to the economist Ignacio Apella so that he can make his presentation.

MR. APELLA.— Good afternoon, and thank you for the opportunity you are giving us to share this study.

(A PowerPoint presentation is shown).

—For us, as a bank, this topic is very important—the title expresses it clearly: “Just in Time”—above all for Uruguay, though not so for other countries in the region. Perhaps for Argentina or Brazil it could apply in part, but for Uruguay it is right now or never.

There are several challenges, but also several opportunities that the future presents to the country, and the idea of this work is to analyze them, show them with arguments and some rigorous data, and above all to think about public policy spaces, which is what concerns us.

I will try to go fairly quickly, but at a measured pace.

Why do we say it is just in time? Because Uruguay is going through—and you know this better than we do—the demographic transition, and its characteristics are more like those of European countries than those of the region; that is, it is a very aged society.

Of course, population aging is a trend that affects every country in the world, but it affects Uruguay especially, within the group of countries in the region. That situation poses certain long-term challenges in terms of higher spending on health and pensions, but also from the standpoint of economic growth, because an older population means a smaller labor force and a limit on the growth of gross domestic product per capita. So there are also some challenges from that dimension.

At the same time, there are some opportunities that must be seized right now. They should have been seized some ten years ago, but we are still in time. That is why, I repeat, the title of the work is “Just in Time.”

I want to go over the key messages of this work, and then I will take up some of them in greater depth.

From the standpoint of public policy, it is right now that we have to begin discussing seriously, and with a long-term view, two major dimensions. One of them is associated with how to extend the bonanza that demographics gives us temporarily over the next twenty years. At the same time, the country's great challenge is how to increase human capital, which is the key and relevant factor from here on for economic growth.

Within the first dimension, there are two major areas in which we must work, which have to do with encouraging the delayed exit of

workers from the labor market—I am not saying raising the retirement age—so as to be able to expand the size of the workforce a little more in the medium and long term, together with creating mechanisms that allow greater female labor participation. There is a lot to gain in that respect, because Uruguay maintains a female participation rate considerably lower than that of men, as is the case in several countries in the region.

From the standpoint of human capital, it is clear that we have to think about reforming the education system as a whole. I know it is a complex, difficult area, where the political economy is strong, but we have to start looking for consensus to improve the content and the how, that is, what we teach children and in what way we do it, something that is relevant for the future, although that is a somewhat deeper discussion.

Finally, we recognize—and we must all do so—that an individual's learning process does not end with the formal education system. Nowadays, given the context of technological, productive, and other change, the learning process runs throughout the entire life cycle. So continuing education programs begin to play a key role in the adaptation and readaptation of the workforce.

Those are the four key messages, and now I am going to go a little deeper into the study.

I was saying—and everyone here knows this better than I do—that Uruguay today is in the middle of its demographic bonus, which is measured by the demographic dependency ratio, that is, the percentage of the inactive population—under fifteen and over sixty-five—divided, let's put it that way, over the percentage of the working-age population. Uruguay is in the middle. Now, it is going to leave this demographic bonus twenty years from now, so there is not much time. Paraguay, to give you an example, will leave the bonus in 2070. It has fifty years of demographic bonus. Uruguay has twenty left.

In that context, while challenges arise associated with an increase in social spending, in particular, and some limitations in terms of economic growth, it is not all bad news. Before reaching the aging stage we have a great opportunity as a country, which is associated with what we call “demographic dividends.” What does this mean? Gross domestic product per capita, that is, GDP divided by N, which is the population, can be broken down as follows: gross product divided by L, which is the number of workers, times the number of workers divided by the total population, that is, employment.

The demographic bonus, the first demographic dividend, strongly favors economic growth, and in practice it has done so. Why? Because as the dependency ratio decreases, that L over N keeps rising. That is, the percentage of the working-age population is at its maximum today.

Now, the problem is that as we leave the demographic bonus, this falls. So, to sustain the pace of economic growth, what we call the “second demographic dividend” has to increase: the productivity of the economy. And there are two ways to bring about that second demographic dividend once we reach the aging stage: investing in human capital and in physical capital.

During the period 2010-2014, demographics contributed to economic growth significantly, because of what I just said: the first demographic dividend. Now, this contribution is temporary. Why? Because in the long run, as the population ages, the size of the labor force decreases, and that is an important limit on growth. So what should we do? We have to take advantage today, right now, when we have the largest working-age population, which on average is the one with the capacity to save: its level of income is higher than its level of consumption. Of course, in the distribution one will find people who can save and others who cannot, but on average that is how it is.

So we have to take advantage of that saving and encourage it, so that it finances investment in both physical and human capital, in order to have more capital per worker in the future and in that way increase productivity, which is what will allow growth to be sustained in the long run.

Now, it is worrying to see Uruguay's savings rate, because it is one of the lowest in the region. Chile is the outlier of the region; it has the highest savings rate, similar to that of the OECD countries. But our guide should be South Korea, which already went through this situation and faced it in that way: with another social security system, with other institutions. That is how the miracle of the Asian tigers was achieved. That should be our concern, then, and I insist that the moment is right now, because otherwise the opportunity will pass us by.

So, are there some areas where something can be done in the short term? Yes, but again: it is temporary. For example, creating incentive mechanisms to delay the retirement age would be a good step, in the sense of being able to increase the size of the labor force with older adults, conditional on the stock of health capital that people have, of course. On the other hand, I insist, we must think about creating mechanisms—there is a lot of room to gain there—that foster female labor participation. There is a World Bank document prepared two years ago that clearly shows the gains in terms of output from greater female labor participation. In that sense there is a lot to do.

All these measures will change the level of the size of the labor force but not the trend. The declining trend will continue to persist. So we have to increase productivity—it is the only thing left—through investment in both physical and human capital. It is the only alternative.

Technological change is another megatrend taking place in Uruguay and all over the world. And it is good news. A priori one could assume that new production technologies generate efficiency gains, a reduction in average production costs and, therefore, greater productivity, and that is why it is good news. Now, we have to be careful and pay attention to the impacts this may have on the labor market and of course on income distribution. And that is where I want to go.

When we talk about technological change, the first reaction people have is: “The machines are coming for our jobs. So we are going to end up unemployed.” And the big concern is, first, how we finance that situation and, second, where we spend our free time.

Unfortunately—or fortunately, in my view—that is not the case, because automation—when I talk about technological change I am going to emphasize automation—machines, both digital and physical, do not replace occupations per se, but some of the tasks that we carry out in our occupations. If someone gives me the example of an elevator operator, it is true that replacing a task is equivalent to replacing an occupation, because the occupation is made up of a single task. But in general, on average, workers perform a combination of tasks. Not all of them can be replaced or automated.

In fact, let me give an example from the United States that I think explains this very clearly. In the period when the installation of automated teller machines expanded, one would have expected the number of full-time bank employees to fall. However, that did not happen; on the contrary, it increased, because these new machines reduce average production costs, make it possible to expand the number of bank branches and, therefore, more people are needed. So that can happen too. Not everything is a cause for concern, but we do have to stay alert.

In Uruguay, technological change is not something that appeared two years ago. It has been going on since the wheel was invented, accelerating in the last twenty years and now a little faster, if you like. But the automated teller machine was born in the nineties or even earlier. That is, we have been living with a process of technological change constantly for many years. However, when one looks at Uruguay's labor market indicators, like those of the rest of the countries in the region, setting aside the 2001 and 2002 crisis, one sees that they are solid. So there is no risk of loss of occupation or employment. What there may be is a potential change in the profile of employment, which also creates risks, but that is something else.

Now, which tasks can be automated? Basically, and broadly speaking, tasks are classified into two groups: manual or cognitive; either we use the body to carry out the task or we use knowledge. These same tasks, in turn, can be classified as routine, meaning they follow a constant

and unalterable process in their execution, or non-routine, that is, adaptable to time, to circumstances, and so on.

Manual routine tasks—those that a machine operator can do, or those that a cashier, a typist, and so on carry out with greater force or emphasis—will, of course, be less in demand for the human person, so to speak.

On the contrary, there is more room for the worker who performs non-routine tasks—they are hard to automate; there is no algorithm that can cover all the variants—or cognitive tasks, such as those performed by a manager, an administrator, an IT specialist, an architect, a researcher, which require qualities such as problem solving, design, and being flexible. One would expect that these types of tasks will take on greater emphasis or a greater share in the total set of tasks that workers perform.

As for the non-routine but manual tasks, like those of drivers—although there are autonomous vehicle tests and all that discussion we could have, but in general these are tasks that are hard to automate—waiters, hairstylists, and all those types of tasks that require a lower level of qualification, one would expect them, too, to be more in demand in the future.

As for the routine cognitive tasks—I think this is the point; this is the central focus—those performed by an accountant, an editor, and even a translator can today be easily replaced; it is something that was never expected. These are the tasks carried out by workers in the middle of the income distribution, that is, the middle class, and this is where the risk is. The new industrial revolution 2.0, unlike the first one, replaces that type of task, and that is where the risk lies.

One example is the translator's task. We all know Google Translate. Twenty years ago, it translated with millions of errors; today, however, it translates much better. So one could expect that, as users make suggestions and so on, it will keep improving. In fact, I know many translators who translate using Google Translate.

So what can we expect? That this type of task will be less in demand in the future because of the advance of automation.

What happened in Uruguay over the last twenty years? In some respects, what happened in Uruguay is aligned with what occurred in developed countries, but in others it is not. As in the developed countries, over the last twenty years in our country the relative importance of non-routine cognitive tasks within local employment has increased a great deal. The chart distinguishes between analytical and interpersonal ones, but it is the same thing.

On the other hand, the intensity or relative importance of manual tasks decreased—I don't know whether by a lot, but it did—both routine and non-routine ones, and even those that one suspects should not or ought not to be automated.

So far we are relatively well off. The concern arises because the relative importance of routine cognitive tasks also increased a great deal, which, as we said earlier, is where the middle class walks. Why does it generate concern? If employment in Uruguay today carries out this type of task very intensively, there are many workers exposed to having their tasks automated in the future.

Why is this not happening now, when it is indeed happening in the developed countries? The hypothesis—it is a hypothesis, nothing more—is that there is a relative price effect. For developing countries, the cost of acquiring a machine that performs this type of task is relatively more expensive than the labor cost, if you'll allow me the expression. As those new technologies become standardized—like any product, like the television or mobile phones—the scale of production increases, and average costs and the price go down. This is going to happen; I mean the substitution. The risk we see in Uruguay, I repeat, is not technological unemployment—as it is usually called—but polarization of the labor market and greater inequality. What does labor polarization mean? If the tasks performed by the workers in the middle of the distribution are going to be automated, there is no other option left than to carry out non-routine manual tasks or non-routine cognitive tasks. The former require a lower level of qualification compared with the cognitive ones and, therefore, a lower level of income. The latter require a higher level of qualification, higher productivity, and a higher level of income. So the distribution of workers will end up graphed, in some way, with two large groups at the extremes.

What is happening in Uruguay? There is an incipient process of polarization, and that is where the red light goes on. As you can see, over the last twenty years the share of employment that is very intensive in non-routine cognitive tasks changed a lot, the share of employment in occupations very intensive in non-routine manual tasks changed positively, and the share of employment in cognitive tasks fell. That is actually the effect of manual tasks, because, as we saw, cognitive tasks had grown. That is why I say it is incipient; it is a first little rash.

That said, what is the space for public policy? Considering the two megatrends, population aging and technological change, there are two major areas of work. On the one hand, we have to try to extend the demographic bonus as much as we can, so as to gain time to be able to increase the savings rate, investment, and the accumulation of physical and human capital, and to end up in the aging stage with an increase in productivity. For that, incentive mechanisms are more important than regulatory changes. In any case, if society accepts regulatory changes, there is no problem. It is necessary to encourage greater participation of older adults and women; that is key.

From the standpoint of human capital, or productivity in general, we have to reformulate the education system, as I said at the beginning. We have an education system in the region—not only in Uruguay—about which we must ask ourselves whether the content being taught is relevant. Is it worth having someone learn the name of such-and-such a river by heart? Is it better to work by subject instead of by projects? By the way, let me tell an anecdote. My daughter, when she was fifteen, was studying Mathematics, more specifically equations. Since I love equations, I asked her if she wanted me to help her, and she said no, that she was studying Mathematics because she had an exam. Days later I see her studying Physics, the velocity formula. So I say to her: “Ah, equations.” And she answers: “No, no, this is Physics.” I insisted, pointing out that it was an equation, and she said no, because the x and the y weren't there. Do you see what I mean? We have that dissociation between subjects, and we don't help kids develop creative thinking or debate when they have all the information. It is a discussion I don't want to get involved in, but I always do. Why don't I want to get involved? Because I don't have much time and I want to focus on what we are moving forward with the Bank, that is, on the need to strengthen continuing education programs, since they generally always appear in isolation, but in this new context, where the learning process does not end with the formal education system, they gain a lot of relevance. In what sense? It is important to create or redesign the continuing education spaces in order to readapt the workforce and rethink the whole system, focusing, of course, on Inefop, but also on UTU and UTEC. And if there is some other institution that I don't know about or am forgetting, please let me know.

It is also important to promote workers' socioemotional and complex cognitive skills, but above all flexibility, adaptability, and many soft skills, to call them something. Moreover, it is extremely important to promote private participation in this discussion. Why? Because it is the private sector that knows better than anyone which skills are needed, or which ones its workers would need, to be able to carry out the tasks performed in that productive sector.

What is Uruguay doing today, and where would it need to be strengthened? Uruguay has begun, besides creating this commission—which I applaud—this space where the long term is discussed—let us not forget that the short-term situation sometimes sweeps us away and everything is urgent, so we have no room for what is important, as Mafalda used to say, and at the same time we have a cost-push inflation problem as a result of the war in Ukraine and we have to go out and try to solve some problems—because there is a group of people who are thinking about that, or at least have a moment to think about the long term, which is important because that is what allows us to reduce urgencies in the future.

On the other hand, for some years now the Statistics Unit of the Ministry of Labor and Social Security has been developing an information system called O*NET Uruguay. Why is it developing this information system? Because it is very important, precisely, for defining the strategy for continuing training

of workers. This project seeks to build a large database, a large information system in which each of the occupations in force in the country can be identified—around four hundred—along with their characteristics, in the sense of which tasks are performed more and less frequently, which skills, knowledge, and abilities are required to carry them out, and what the work context is. In this way, we have the characterization of each of the occupations so as to understand as well as possible what each worker's needs are in terms of skills, abilities, and knowledge in order to develop in them. In that way, the database makes it possible to direct continuing training courses. That is one of the great advantages.

Between 2019 and 2020, a first wave of occupations was surveyed; there were only twenty-three. Why twenty-three occupations? For a reason of resources, both budgetary and human. For that survey, or for the identification of those occupations, four characteristics were considered: their importance in the economy in terms of job creation, the risk of automation using a certain index, dynamism—that is, how employment in those occupations changed—and, of course, some rural occupations had to be considered. We have the list of all the occupations with their characteristics. At the Bank, working together with the ministry's team, we developed an algorithm, using this database, that made it possible to draw a map of occupations.

Something I did not mention is that this database takes the United States' O*NET as its model, which is the one used by everyone in the world to work on the subject of tasks and skills in occupations. This occupation space is a very useful instrument that, although it doesn't solve anyone's life, does contribute precisely to defining how to redirect or direct training or capacity-building courses. Why? In the chart we can see little bubbles; each of them represents an occupation, which has a number—for the sake of simplicity, since it is easier to put a number than the whole name of the occupation—with the positions grouped into neighborhoods according to the skills they have in common, that is, the ones workers would need to have to carry out the tasks in those occupations. So a clerical worker is very close to an accountant, but an accountant is not very close to a clerical worker. Nevertheless, we take the shorter distance and consider them neighborhoods. Let me give an example. If the market for accountants is affected, through automation or any other reason, there is a shock, and the accountants have no work, they could easily move to an occupation in the neighborhood, such as clerical workers, since they have the skills for it. Now, going from clerical worker to accountant is already somewhat more complex; they won't be accountants, but with some mercantile-expert training they could carry out some task in that field.

In any case, not everything is that easy. What is being attempted is to locate nearby occupations so as to be able to redirect workers in a crisis situation toward them, promoting some skills. For that to be effective, the retraining process must take place in a reasonable amount of time, and so the closer the occupation we want to send the person to, the shorter the time

for training has to be. We run the risk—those are the colors we can see in the chart—of sending the person to an occupation that is made up, for the most part, of tasks at risk of automation. So let's try to send them to a circle that is not so red. That is the idea of this map.

Of course, this map is incomplete, because it only includes twenty-three occupations, but the algorithm works and is replicable—we have already done it—as the Ministry of Labor and Social Security and the Statistics Directorate keep surveying and adding new occupations to the database. In that way, today we may have two occupations that are close, but in fact, once the whole universe of four hundred occupations is placed, they may end up far apart, because there will be others that are closer. This is not the truth, but an example, an instrument, and I am showing it so that we know where other actors in the country are working.

This database is extremely important for different reasons, but above all because it has multiple uses and users. On the one hand, of course, there are those who design, promote, or manage continuing education programs, such as Inefop, and educational programs, such as UTEC and UTU, and on the other, there are the users, individuals and families, when they must decide on the learning paths and future career trajectory of their children. In the United States this database is widely used by families, because when a teenager decides what to study and which university to go to, part of that decision is made with a computer in front of them, going to the site onet.com and seeing what the tasks, the occupations, and the average salaries and labor incomes are. So it is very useful for that as well.

In summary, the information system is a fundamental pillar for defining continuing education programs. Of course, afterward we also have to work on the supply of courses and on training the training centers themselves, but this is very important; it is the pillar of the design of this type of policy.

I repeat: Uruguay is the first country that is thinking seriously about this over the long term, through the Commission on Labor Affairs and Social Security, the Special Commission on Futures, and the Ministry of Labor and Social Security. Argentina tried to do it—for example, with O*NET—and it is moving much more slowly. From my point of view, Uruguay is an example for the region in how to approach these discussions, whether or not we reach a good outcome. We may fail or succeed, but the initiative and the search for consensus in these discussions are extremely important.

Of course, within what the Ministry of Labor and Social Security is doing, a great deal is still missing. This is a first little step, and more resources, both physical and financial, are needed to be able to expand this database quickly. Today we have only twenty-three occupations, which, although they represent between 30% and 40% of total employment, leave out the rest of the occupations, and they have to be added quickly in order to have the complete map; otherwise, it ends up not being useful.

I won't bore you any longer. Thank you very much.

THE CHAIR.— Thank you very much, economist Ignacio Apella.

Today the turnout has been very good, because the following are present: Representatives Elsa Capillera, Martina Casás, Lilián Galán, Verónica Mato, and Fernanda Araújo; Representatives Sebastián Cal, Martín Melazzi, Iván Posada, Gabriel Gianoli, and Juan Rodríguez; Senator Guido Manini Ríos; and Senators Carmen Sanguinetti, Gloria Rodríguez, and Silvia Nane.

Also with us are Bruno Gili—from the very first moment of this process—and Lydia Garrido, as advisors to this Special Commission on Futures; Inés Fynn, representing UNDP; and María Noel Lanzaro, Valeria Bolla, and Celia Ortega, representing the World Bank.

We have a few minutes for questions and an exchange of ideas.

The concept of the demographic bonus is there as a starting point.

MR. MANINI RÍOS.— Good afternoon.

Thank you very much for the presentation, which has been very enlightening. Congratulations.

I am going to ask a question about the demographic bonus—I arrived a little late and perhaps I missed something—because I understand that it could also be affected if births in this country were increased through appropriate policies. If measures are taken starting now, in twenty or thirty years could that letter L change significantly?

MR. APELLA.— Yes, of course, and also with migration.

MR. MANINI RÍOS.— It is a way of thinking about how to influence that relationship in the long term: with policies that encourage one thing or the other.

MR. APELLA.— From my point of view, when one makes a decision, one always takes a derivative: one looks at what the marginal income and the marginal cost of that decision are. When I decide to have a child, it is the same. Therefore, for any policy that encourages a higher fertility rate, the decision comes down to price. As countries develop, the cost of raising a child goes up. So families make decisions based on that; this is what has happened and what is happening. Also, there is a very important factor having to do with the significant reduction in teenage pregnancy, which is also a problem on which, fortunately, important improvements can be seen.

I understand when incentive policies for fertility, for having children, are proposed. The question I ask myself is the following: how much money do you have to give? How much?

MS. NANE.— I don't want to start a debate, but as long as it is women who keep having the children, there are quite a few things to think about besides cost. For example, we have to think about a National Integrated Care System that works properly and so many other things, unless we go out and make kids in some other way that hasn't occurred to us yet.

THE CHAIR.— While another question comes in, I want to make a comment.

I don't want to take on the role of Representative Posada, but the Minister of Labor and Social Security, Pablo Mieres, has expressed his expectations regarding this project—he has stated it publicly and also said so the other day at the event—because it is information. When the ministry makes its decisions—including Inefop—it is very important for it to have this data. Without ascribing bad intentions, in other times—it doesn't matter when—efforts have been made to train people in skills in areas where there were zero chances of creating jobs. So I think this information is very important. We all know that Inefop is also working along this line.

I take the opportunity to share—we have not yet decided it, because the commission has not yet had an occasion to do so—that there are proposals out there from some of the experts of our Special Commission on Futures, basically from Guillermo Dutra and Felipe Migués. Among other things, they have been proposing to think about regulations for dual training, which do not have to be legal ones. In the study done by Ignacio Apella and in a number of other studies, the idea clearly appears that training within companies becomes an indispensable necessity, and not only with the worker in mind. The good thing about this is that demand and supply, supply and demand, begin to come together. The example was given here of when a company no longer needs a task to be performed, but the worker is useful to it, because he has been with them for more than ten or fifteen years. It likes him, he is a partner of the company, but it will no longer have him in that task.

Training within companies, in addition to dual training, is changing and creates the need to make it easier from a regulatory standpoint, because if we do not hand companies the most complex task, they end up taking on costs that are actually society's.

So we have a first round of public presentations on May 12—as we decided at the commission's first session this year—and perhaps for the second round we could already define that other session linked to training. I reiterate that there is a concrete proposal from Guillermo Dutra, a member of our group of experts.

On another matter, people have come forward—perhaps Bruno Gili can complement this—from a sector we did not take into account and left out of the original invitation: the organization of managers or experts in personnel selection. They have been reproaching us, rightly, that they are the ones who know the most about practical demand, so we also promised them a session. These are very valuable and very diverse people—coming from all activities—who formally asked to participate and have their voice heard on this topic. So we do have an agenda.

MS. GALÁN.— Thank you very much for the presentation.

I kept thinking about what Senator Nane said regarding one specific public policy: the National Integrated Care System. Actually, I also wanted to talk about gender public policies, which go beyond the development of that system. If today we study the reasons that lead women to postpone motherhood to later ages, we see that it is because, with equal training, they do not have the same opportunity as men in all jobs, that is, managerial ones, research ones, and so on. There is no equality of opportunity there.

So, for society as a whole, gender policy has to do precisely with the incentive for fertility and so on. Therefore, for entry into the labor market in certain sectors, a National Integrated Care System that is working properly is needed, along with other gender policies that go further.

On another matter, I want to highlight that I thought it was a very good presentation—I understood it would be a very quick one—that would give material to discuss for many hours and to learn more about these topics.

I also kept thinking that we should look at the automation of work from a gender perspective. I know that in Uruguay the Faculty of Economic Sciences and Administration is working on those topics.

At the same time, I find it very interesting to look at this from the standpoint of the change in countries' productive structure. If we take into account the earlier industrial revolutions, we see that in the sixties or seventies, in a rich country like Uruguay, which has cattle farming and soils that are fertile for certain purposes, certain things mattered more in automation. Now that outlook is perhaps different, because today that can be managed from anywhere in the world and we do not need the labor, for example—though I know nothing about the subject—to monitor soil moisture. I insist: is it more important today to have the natural resources or the knowledge of that technology? So there is also an asymmetry between developed and non-developed countries. What is Uruguay's position regarding that development of the productive structure? I think there is a very strong discussion there that must be the outlook of the future.

Thank you, Mr. Chair.

MS. SANGUINETTI.— Thank you very much for the presentation. For those of us who follow these topics, there are some we know because we already work with them and others that are very new. I found the presentation very interesting.

Regarding the demographic bonus, I am particularly interested in, and working on, the topic of talent attraction. Although there are emblematic cases in countries like Israel or some other, I want to know whether you have any systematization of public policies along those lines.

Thank you very much.

MR. APELLA.— I am not familiar with it, but we can certainly look into it within the team and even within the Bank, because one of the things that characterizes it is precisely having international experience. So I would have to identify the person or persons and get back in touch with Legislator Sanguinetti, if she'll allow me.

MS. CASÁS.— It was a very interesting presentation. Personally I was not familiar with O*NET, but while at university I came across similar platforms, such as Will Robots Take My Job?, which are widely used in the United States.

At the event that was held, organized by the Special Commission on Futures, it was said that we clearly cannot plan for the future and that we have to improve our capacities to adapt. In that regard—I don't know whether it is a professional deformation, a generational one, or of some other nature—I am concerned about the effects of climate change on job loss.

With this matter of having to make an ecological transition, there are many jobs that could be lost. Uruguay experiences a constant concern on this topic, since we have a public state-owned company on which a huge number of jobs depend and, eventually, in the future that I am going to live through, that company is going to have to undergo some kind of transformation. A huge number of jobs are going to be lost, and not only because of the transition to renewable energy. I have read scientific articles that say jobs will be lost, but that they will be reconverted. Even so, it seems to me that they are not in those neighborhoods, because although they are in the energy branch, oil energy is not the same as renewable energy. In that regard, it would be interesting if you could tell us whether you have any assessment to offer or any material to share with us.

On another matter, there is the issue of pandemics, a type of phenomenon that my generation is going to see more often. In relation to that topic, some jobs are more vulnerable. In Uruguay, for example, the tourism sector—which is precisely one of the main sectors of GDP—was affected by these changes that we clearly cannot foresee.

MR. APELLA.— Let's hope the pandemics that Legislator Casás mentions do not occur so often. Let's try to be a little optimistic.

On some topics I don't have answers, and they remain pending items that one is left with.

I want to refer to something that was said in several comments. In our work perspective, gender is cross-cutting across all dimensions. In each of the discussions, whether on climate change, technological change, demographics, or the labor market, the gender dimension has to be there because it is cross-cutting. That is something I wanted to comment on.

Of course technological change impacts men and women differently, but not because it is unequal, but because the labor market is unequal. It is the same as when they tell me that the pension system is unequal in terms of gender. The pension system is not unequal; the labor market is. The pension system reflects the performance of the labor market. We haven't published it, but we do have some very specific indicators on the incidence of technological change on tasks by gender, of course in cognitive, non-routine tasks.

On another matter, in terms of climate change and so on, at least I have not taken part in any research on the impact of climate change on the labor market. My perception is that, like any change, it generates gains and losses. Jobs are lost not only because they have to be green, let's say, but also because a flood in Paraguay does not allow a certain economic activity to be carried out. Floods in that country are becoming much more frequent and intense and cause disasters. That means this happens for two reasons, both by exclusion and by reconversion.

I have not studied it; I am saying it because talking is free, but we would have to see what the neighborhoods are. The truth is that I cannot answer that question.

THE CHAIR.— The floor goes to Senator Nane, then Representative Martín Melazzi, and finally we will close, because we have another delegation outside waiting to come into the commission.

MS. NANE.— I want to raise a few reflections on what we have been discussing.

It is true that, as a country, we still have a fairly primarized economy, and I think that is one of the matters to take into account. We also have, and have had in recent times, a significant increase in deposits abroad, meaning that there has been no reinvestment in the country. Likewise, we have a research and innovation system that basically and solely runs on State budget. We have not yet managed to have a leg in private investment, which I think is a path we must begin to travel.

Senator Sanguinetti was talking about attracting talent. Today we have a software development industry with about a thousand companies that export

about one billion dollars, for the most part to the United States, but a large percentage of that export is through Manpower and not in products. It does not become intelligence; it is basically people chipping away at the podium, as they say in the jargon.

Another of the big problems we have is that artificial intelligence is increasingly replacing the task of programming, so I think those jobs that today we see in high demand have rather little time left.

In relation to all that, and with respect to one of the legs that the Chair also mentioned when he said we are missing the human resources recruiters, I think one of the big problems we are going to have is that, very soon—and it is already happening—the ones recruiting will be artificial intelligence algorithms. When artificial intelligence algorithms do the recruiting, we have to start asking what data feeds them, and that is where the whole problem of bias comes in, which is not only about the female population—Senator Gloria Rodríguez knows very well what I am talking about—because there are so many other minorities that get completely lost in the biases. Therefore, the future of work is going to belong to those who can access those jobs, and I think that is a point of view we must not overlook in the analyses we do.

Thank you very much.

MR. MELAZZI.— First of all, I thank you for the very good presentation we have been given; it was impeccable.

Simply, and by way of an observation, I would like to know whether we share similar concepts. From what I have been reading, in Uruguay, from 2007 to 2017, micro and small businesses, thanks to the introduction of technology, increased their output by 56%. It is clear that when one incorporates technology it often displaces certain jobs, as was just being said. But that displacement, as you rightly said when making the comparison with the automated teller machines, because of the improvement in efficiency and profitability that companies can have, automatically turns them into generators of new sources of work. From what I see, and as this statement says, from 2007 to 2017, although productivity improved by 56%, no new sources of work were generated, and that is the great challenge we have. One could think that over the next ten years the same will keep happening, that is, that technology will continue to be introduced and companies will be more productive, so that the staff who are displaced could be hired elsewhere because companies keep growing. So I think the great challenge Uruguay has is to explore new production systems that are not known in the country today, but do exist in the rest of the world. We must dare to do it, and for that we have to strongly support innovation, science, and technology in our country. I believe we should go down that path because Uruguay has the possibility of selling knowledge to the world. Today the world has shrunk thanks to the Internet. Therefore, Uruguay has all those possibilities, and I hold deeply to what was said to the effect that education has to be steered toward where the world of employment is going. That is why

we must have an education more up to date with our times. It is simply an observation, but I don't know whether you share it.

Thank you very much.

MR. APELLA.— I completely agree.

One thing I did not mention, but which is quite clear in the study, is that technological change can generate two effects: the substitution effect and the scale effect. In the substitution effect, when automation comes in, workers are displaced. The scale effect is the chart we showed on ATMs, automated teller machines, and bank employment.

We studied three sectors in Uruguay, and one is commerce. And I am going to give an example regarding Banco República. The bank's output grew, but the size of employment stayed constant. That is, the labor force stayed constant despite the expansion of techno-finance, home banking, apps, and so on, when one would expect the opposite. Of course, it is not such good news because new jobs are not created, but well, at least they were not lost. That is my perception of the matter. What the BROU authorities were saying at the time was that those workers needed to be reprofiled. That is what was happening. Moreover, there are labor market matters that define things much more than individual decisions. I think the important thing is to try to foster what was being said, that is, productive sectors where the scale effect prevails over the substitution effect.

I want to refer to something the Chair mentioned at the beginning. As long as we are very clear about what an internship in a job position means, of course it is the best option. Several impact evaluation studies show that the employability of a person who goes through dual training, compared with one who does not, is three times greater. Now, that has political risks because it can create incentives to substitute workers. So one has to keep that in mind so that no noise or political, and of course social, conflicts are generated. The impact is estimated, studied, and very high, so it is worth it.

THE CHAIR.— As I said at the beginning, the World Bank has always shown itself willing to participate actively in this process.

We have a project that, in due course, we are going to present.

All this work, beyond the presentations, has a part of asking questions, of going more toward demand. We have been offered—and we have accepted—to carry out a piece of work along the same lines that the Bank has been doing with the Ministry of Labor and Social Security and the Government for some time now. It is about being able to ask in as objective a way as possible and without biases, so that it then helps us make better definitions. Some regulations and proposals are being put forward in this framework and,

therefore, we are working to give the greatest guarantees, not only to the commission but to Parliament, regarding that exploration of the demand of all the different segments that are at stake. I clarify that it is not only about young people—although of course it is important to ask them—since where we see the most uncertainty, and even, we might say, anguish, is among adults, because their jobs are more at risk every day and we have to hear their voices and proposals. Perhaps one thinks a solution is the best one, but the truth is that sometimes it is not what is being waited for. Of course, there we will have a great diversity of alternatives and, although in this there is no magic one, the truth is that the greatest malaise in global adult society is the anguish that unemployment generates. Before, this seemed like a prophecy, but today we see it every day and everywhere: at the grocery store, at the supermarket, at the bank, on the bus, and so on. Progress is being made along that line; I know that the World Bank wants to present to the commission a piece of work that gives all of us the greatest guarantees and allows us to take the results with the greatest objectivity. We thank you once again and we will keep seeing each other. I report that the delegation from Finland is already here. It will be a short meeting, of no more than half an hour.

(The delegation of the World Bank leaves the room).

*(Ms. Emilia Ahvenjärvi and Ms. Tarja Laaksonen enter the room,
and Mr. Andrew Cooper).*

—The Special Commission on Futures of the General Assembly is pleased to receive the delegation of Finland, made up of: Ms. Emilia Ahvenjärvi, Education and Science Counselor at the Embassy of Finland in Buenos Aires and of the Ministry for Foreign Affairs of that country; Ms. Tarja Laaksonen—whom we thank once again for her goodwill toward the commission and toward Parliament—and Honorary Consul Andrew Cooper, whom we also thank for his goodwill toward the commission.

I should mention that the meeting of the interparliamentary friendship group is planned for May or June—there is talk of moving it to June because in May several legislators would be absent. Since Ms. Tarja Laaksonen is present, we asked her to see whether it is possible to move it to June.

On the basis of a very rich relationship that we have begun, the commission also plans to take part, in the month of October, in the first Summit congress organized by the Finnish Parliament. Together with the Vice President of the Republic, who is President of the General Assembly, and with the President of the Chamber of Representatives, we have arranged to go accompanied by a large delegation, so far the largest that has been proposed to us. We are very interested in participating. In addition, we have also been in contact with other parliaments that are very interested in taking part. We are even promoting some

artistic activity from Uruguay for that event. I believe this is going to be a very important occasion that will, in some way, deepen this process. It is no coincidence that we are doing it with Finland, since it has been the pioneering country in this process, in which it has been engaged for more than twenty years, besides having demonstrated more than successful results.

Without further ado, we give the floor to Counselor Emilia Ahvenjärvi.

MS. AHVENJÄRVI.— Thank you so much.

I have been here in the region for almost three and a half years, and it is an honor for me to be here today with you presenting some key topics about the Finnish education system. I thank you very much for your interest in Finnish knowledge in this area.

As we don't have much time, I am going to move straight on to the subject at hand.

(A PowerPoint presentation is shown).

—The current motto of our education, “Finland is a country where everyone always wants to learn more,” was instilled about seven years ago by Sitra—the Finnish National Fund for Research and Development—which functions as a think tank with the idea of drawing up a plan for a knowledge system and an education system for the future. If we think of a country where everyone always wants to learn more, it is obvious that much more than education alone is required, that is, a certain social and economic well-being that allows the whole population to want to keep learning. Today we are going to focus on education and the knowledge system, so that continuing education, as well as that constant restlessness and desire to learn, can become a reality.

We are often asked what the pillars of Finland's educational model are. There are several key themes in the history of our system and in its current development, but there are also certain aspects that have been identified as the most important in the success it has achieved.

Point number one is quality education accessible to all. When we talk about accessibility we do not refer only to every student being able to have a place in a school—that is, school accessibility—but also to the focus, within the school or educational center at whatever level, being on the student, on their learning process, and on being able to identify each individual's capacities in that process.

The second pillar of success is highly trained teachers, with high professional competencies, with quality training in Finnish universities and with very significant social recognition.

Third, for a model to keep bearing good fruit it has to be in constant renewal. This renewal process has to be based on evidence and must involve different stakeholder groups, who are teachers, students, representatives of industry and services, and also other representatives, such as the unions.

Fourth, there has to be a system that allows continuous learning for everyone. That is, our system has no dead ends; it does not matter what educational option one had before, because there is always the possibility of continuing to learn and train.

Let's look at the history of this system for a moment.

Our first approach to something resembling an education law dates from the mid-nineteenth century and, more or less at that time, the first Finnish-speaking teacher training seminaries also began to be created. A few years after Finland's independence was declared—on December 6, 1917—the first Compulsory Education Act was published, with a five-year school and the first national curriculum frameworks.

The current system was created in the late sixties and is called the compulsory, unified basic school. Unified means that during the nine years of compulsory schooling there are no differentiated days for more practical, more scientific, or academic studies; rather, all students study within the same framework for nine years. This system began to be implemented in 1972 and is considered the basis of the current success of the Finnish education system.

There are several curricular reforms that have accelerated since the compulsory, unified basic school. The curricular reforms have supported all the relevant changes in the education system and in the needs for new competencies and ways of teaching.

Since the seventies, there has been a curricular reform roughly every ten years. In reality, it has to do with a cyclical process that is constantly under way; the curricular framework is never finished, but is a document that adapts to the needs of each moment.

I also want to point out a few things about the management system, education policy, its implementation, and how it is structured. Under the Ministry of Education and Culture are the National Agency for Education, the Education Evaluation Center, and the Educational Evaluation Council, baccalaureate exam.

The National Agency for Education has an important role in implementing education policies and in Finnish educational development, as well as, at present, an internationalization function.

Our Education Evaluation Center analyzes the achievements, development needs, and level that our students are reaching, but the Finnish system has no standardized exam within basic education. The only standardized exam we have—which is at the end of upper secondary level—is the baccalaureate exam, which is used as a university selection test. This does not mean we do not evaluate our system, but that the evaluations are based on sampling and on different types of studies, so that we also have our own data and do not depend only on international assessments.

In addition, the Ministry of Education and Culture collaborates with other ministries; for example, with the Ministry of Economy and Labor in forecasting skill needs for different sectors, or with the Ministry of Social Affairs and Health on early childhood education and care.

There are also regional state administrative agencies that collaborate, together with the municipalities, in implementing the educational offering and proposal.

Finnish education administration is municipal. The municipalities are primarily responsible for organizing education at the early childhood, basic, and secondary levels, but there is also the possibility of creating schools through private providers and proposals. I do not say they are private because, although the initiatives are, if they are accepted by the Ministry of Education and Culture they are always paid for by the State. Consequently, there are no private schools that operate through payment and financing by the students' families.

In turn, there are some educational institutions maintained by the State; these are special education centers and other institutions created by foreign governments, mainly in the capital.

Now I am going to refer to the levels within the system. I apologize because the next slide is in English, but we could not make it in Spanish, although I will explain it briefly anyway. The most important thing is the recent change in these levels. In Finland the age for completing education has just been raised to eighteen; before, the obligation to be within the education system ended at seventeen because it was considered that completing basic education—including the primary and secondary levels within it—was enough to lead a life in society. Nowadays it is considered necessary to have upper secondary education in order to find a job and lead a normal life in society. For that reason, raising the age requirement is intended to ensure better possibilities to keep studying and complete that level of education.

Another important aspect in this diagram is seeing where the arrows go. We have a dual system in which, after basic education, there is a more academic part and a more technical one directed toward the world of work, but these two paths are in constant communication with each other. One can move from one to the other; for

example, one may have chosen vocational upper secondary education, but afterward one can move on either to a university of applied sciences or to a scientific university; or, perhaps, after completing a bachelor's degree at a scientific university, if a person finds it beneficial for their future work to do a master's at a university of applied sciences, that is also possible. In short, it is possible to go from a university of applied sciences—for example—to a scientific one to study for a doctoral degree. This is, precisely, the approach to ensure there are no dead ends within the education system.

Let's look in a little more detail at the different levels within our system, starting with early childhood education. This educational level goes from zero to six years and overlaps with parental leave, which in Finland can be up to fourteen months, shared between the mother and the father. The aim is for men to take part of that paternity leave and, on the other hand, for women not to be away from the world of work for a long time.

At this level the approach already begins that each child's individual capacities have to be recognized and fostered. So, from the very first moment in day care, an individual learning plan is prepared in which the responsible educator, the parents, and also the child are always present, because it is thought that from the first moment the student is responsible for their own learning process.

At this level the principles for learning are: the intrinsic value of childhood, growth as a human being, children's rights, equity, equality, and diversity—including the diversity of families—and a healthy and sustainable way of life.

At age six, Finnish children attend preschool education. It is the year that precedes the start of compulsory schooling, and the municipalities are also in charge of organizing this education; in addition, it is an educational level that has no cost for families. This is in the hands of teachers or educators with university training, which can be from scientific universities, faculties of education, or universities of applied sciences.

Normally the preschool day is four hours a day, and afterward the student can stay in the same place—as they did previously during the early childhood education years—in case they cannot be at home with their parents.

At this level there is learning of letters, numbers, and natural and cultural phenomena; it is where the foundations for learning are established, but these are not study objectives but a kind of immersion in what will be studied and learned later. Moreover, all learning is based on play and activities, above all outdoors.

Let's look a little at compulsory basic education.

It begins at age seven and is organized mainly by the municipalities. At present we have a little over half a million students in municipal compulsory basic education, and that means, more or less, 2500 schools.

The average attendance of a Finnish school is two hundred students; compared with many other European countries, these are quite small schools. The direction is toward our schools being increasingly concentrated and larger, above all in the larger cities in the south of Finland. In turn, the average class size is about twenty students.

The school day depends on the level one is at; normally, the number of hours increases as one advances year by year, but even so—according to international comparisons—the number of teaching hours in Finland is below the OECD average. This tells us that a key to educational success is not necessarily increasing the teaching hours but the quality of the content. Normally our classes are forty-five minutes long and the school days—that is, days of going to school—per year are between 185 and 195, depending on how each school organizes itself.

I also want to say a few words about teaching work in Finnish schools.

Teachers have great freedom to organize classes independently, on the basis of the national curriculum and an adaptation, both local and by the school itself, that has been made of that curriculum.

The teachers who teach from the first year to the sixth are specialized in Pedagogy, and from the seventh to the ninth they are specialized in the subjects they teach. This means that during the first six years the teacher normally has the same children under their charge and, therefore, knows their capacities very well and knows how to develop classes according to their needs.

An important goal is for students to learn on their own and also to evaluate their own learning process, aiming for them to take responsibility for it. During basic education, the evaluation of learning is the teacher's responsibility. As I mentioned, there are no standardized state exams, but there is constant monitoring of educational results, with evaluations and random samples on those same processes in the daily life of the school.

The image you can see next explains well our vision on the importance of recognizing students' individual capacities. It contains a quote from Albert Einstein, which says: "Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid." That is why both the teaching offered and the way students are evaluated cannot be the same for everyone, but must be adapted to their way of showing their capacities.

I understand that those present would like to ask some questions.

THE CHAIR.— What you are describing is very interesting, even more so the second part of the presentation, since it is something new, so we ask you to continue. Afterward we will ask our questions.

MS. AHVENJÄRVI.— Then I will continue with my remarks.

Since we are in a competency-based education system and the objectives are presented as such, at each learning level appropriate for each age the competencies are expressed in a particular way. In the national basic education curriculum, these cross-cutting competencies have to do with multiliteracy, with ICT competencies and working life competencies, with the capacity to think, express oneself, take care of oneself, and build a sustainable future and environment. The competencies for the higher level are the same, with the difference that the topics are worded in a way suited to that educational and training level.

Regarding upper secondary education, I think that in the case of Finland the important thing is to understand that the vocational training option is not a secondary alternative when one cannot choose the more academic path. In fact, 43% of basic education graduates choose this path directly and, as I mentioned, it is also connected to the more academic path if there were learning concerns or needs on that side. It is professionalizing training; this means that once this level is completed, the graduate has their competencies recognized in the world of work.

This level was reformed in 2018. At that time we moved to a vocational training that is completely competency-based, again through a personalized competency development plan, that is, whether it is an adult coming from the world of work or a young person leaving basic education, the start of their studies is in a personalized competency development plan. Based on that, their flexible path of study is laid out, around diverse learning experiences that include, in an important way, being immersed in the world of work from the very first moment. To complete those studies, one always has to show the competencies acquired, and representatives of the world of work take part at that stage. In this way, the world of work not only gets well-trained professionals but also passes on information about the needs of the different sectors to our vocational training education system.

Let us mention a few notes about our universities. We continue with these two paths, that is, we have scientific universities and universities of applied sciences that communicate with each other.

In Finland, spending on tertiary education represents 1.8% of GDP, and right now the participation of our universities in all research, development, and innovation activities is increasingly important. We are close to 3%

of GDP in terms of spending on innovation and development, and the goal, looking toward 2030, is to reach 4%. The pandemic has brought us some difficulties and significant participation from the private sector will also be required, but we continue to maintain this goal.

Something interesting about the universities is that perhaps we understand their autonomy somewhat differently from how it is understood, for example, in Uruguay. Our universities are definitely autonomous, but they are constituted as corporations under public law or as foundations and are capitalized by the State, with public financing for more than ten years, and what they receive through the Ministry of Education and Culture is no longer in the state budget but is given through a funding scheme and performance agreements.

In addition, it is important to note that they have a significant selection of students, not only in teacher training but in practically all programs, and for that selection both what has been done at the upper secondary level and how candidates perform on the selection exams count.

In the universities of applied sciences, their role in the regions of Finland is very present, as is their involvement in regional development through research, development, and innovation activities, and the way students are trained so that they can respond to the needs of industries and the world of work in each region. Among the owners of the universities of applied sciences are the municipalities and the Finnish regional consortia; in that way they also exercise direction over them and can contribute capital to them.

At present, there is increasing effort to have our scientific universities and those of applied sciences work with each other, so that they take part in innovation processes and also create university consortia so that each can complement the others with its own approach and areas of work.

I want to say a few words about teacher training in Finland.

It is one of the most sought-after programs and the hardest to get into at universities. In the toughest years, roughly 10% of candidates are accepted to do these studies. The criterion is not that they be the most talented or the best performers in their academic studies, but that they have several qualities that are considered important for teachers to have. Aside from creative qualities, they can be qualities such as the capacity to manage frustration, situations of lack of learning, in short, diverse situations that can be found in the classroom. Our universities select well the candidates who will be future teachers, and the material they receive to provide that training is really good and, therefore, key to then having good teachers.

I am going to point out some important topics in teacher training.

Teacher training goes up to the master's level. It is training that from the first moment includes both theory and practice, as well as research competencies, especially in the last part of the training. This combination of theory and practice has to do with integrating work in schools into the studies, where one practices putting the theory learned into action, that is, implementing it.

At present, one thing that is being encouraged, both in teacher training and at work, is collaborative work through combining classes and subjects, to try to ensure that teachers do not work only in their own classroom but can also combine their competencies to offer more diverse teaching.

As for curricular work—which is very important in our country too—when a national curriculum is reformed and one tries to implement it, it is very important that teachers and school principals have taken part in that curricular renewal work. The different stakeholders are widely consulted in the planning process, and all the cooperation with different interest groups and authorities is open and transparent. This is the key at the moment of implementing it, and it makes that curriculum feel like something recognized in the schools and really reach the classroom.

For us, at this time, one of the most important reforms has to do with continuous learning. We are in the middle of a parliamentary reform of the continuous learning system. It is parliamentary because it is a long process and the aim is to ensure that it does not stay within one government but has a reach beyond the current Government. It also has to do with the needs, not only in Finland but global, to generate new competencies, above all for employment or the strengthening of competencies. To that end, at the end of last year a service center for continuous learning and employability was established, which has an important role in forecasting the need for new competencies and also in distributing funding for this purpose.

We see the continuous learning system as a kind of insurance for all the changes that may arise. It does not matter whether they have to do with climate change, disruption in employment, different reasons for economic insecurity, or health reasons. If we have a system in which everyone can find a way to keep developing new competencies or acquiring, for example, new job qualifications, we consider that it is the insurance for the future of the Finnish population.

To conclude, I simply want to offer you a few notes on the forecasting work, within the education system, the knowledge system, and continuous learning.

Our Ministry of Economy and Labor makes forecasts about different jobs, such as what type of competencies will be needed over the next

five years in different areas. At the same time, our National Agency for Education makes forecasts for fifteen years ahead as to how our education system has to develop so that it can offer or respond to those needs that we believe we will have in roughly fifteen years. One example of this is the service center that was created and the continuous learning system we are improving.

I think an important element in the whole system is a culture of adapting to changes proactively. It is about not waiting for changes to arrive, but being prepared for when they do.

THE CHAIR.— Thank you very much.

Now we have a few minutes to exchange views and ask questions.

I will begin by asking about the following. Two centers were mentioned, and I am left wondering whether the Continuing Education Center and the forecasting work are part of some system and how they are coordinated with each other.

MS. AHVENJÄRVI.— The forecasting work is done at different levels. In this case, I mentioned the Ministry of Economy and Labor. The center that has been created is operating under the National Agency for Education, but it is not a center that offers training; rather, it coordinates activities related to continuous learning. There are several activities in different bodies and different instances of forecasting future needs, but this is the most relevant within the education system and the training system.

MR. SABINI.— As is known, in Uruguay we have an ongoing debate about competencies and content. The Uruguayan education system is clearly oriented toward content, although there are some educational centers in the interior that work within a competency framework. These are some experiences that have been under way for about six or seven years.

From the presentation it was clear that competencies carry a very important weight in Finland, but since I read in the press that you are debating this relationship between competencies and content, I would like you to explain how you are carrying out that debate and on the basis of what evidence.

MS. AHVENJÄRVI.— In reality, a competency system and a content system do not have to be set against each other. We need knowledge, to handle information, to know different disciplines, but we must also understand what that knowledge is for. That is why objectives are set in terms of competencies, to form people who can resolve different situations that may not even be known today. So the knowledge that is acquired has to serve as a competency as well.

I think that in the case of Finland there is a consensus on this topic. There may be some divergent opinions about where to put the emphasis, but nowadays no one doubts that information has to be applied. Knowledge is of no use as such if that application part does not exist.

MR. MAZZINI.— From what I understood, there is a baccalaureate exam that works as a selection test. Now, does entry into teacher training require a minimum score on that selection test, or is it an independent test?

MS. AHVENJÄRVI.— For access to teacher training, the grades obtained at the upper secondary level count, but that is only one part. In the case of a candidate who has lower grades from the secondary level, more weight is given to the score obtained on the entrance test. That test has, on the one hand, a theoretical part, in which the capacity to take in and manage information is measured. Then there is an aptitude part and, depending on the faculty of education being applied to, an interview or a psychoemotional test may be done.

MR. MAZZINI.— So a minimum on the baccalaureate test is not required?

MS. AHVENJÄRVI.— Yes, in reality a minimum is required, but it is not set because the candidates who apply bring good grades. Among those who apply, it is common that ten percent can get in. So that ten percent certainly brings good grades from the secondary level. There is no need to set that minimum because they are good candidates. If they were people who barely passed the secondary level, then yes, a minimum would have to be set, but at this moment in our case we do not require it.

MR. SABINI.— Regarding student evaluation, I would like to know how the system works, that is, whether it is quantitative or qualitative.

Another topic that has also been debated quite a lot in Uruguay in recent years has to do with a national education plan. I would like to know, then, whether you have a plan and how it relates to these curricular transformations that you mentioned.

MS. AHVENJÄRVI.— Regarding evaluation, I assume you are referring to that of basic and secondary education.

MR. SABINI.— Exactly.

MS. AHVENJÄRVI.— As I mentioned, it is mainly in the hands of the teacher in charge of a group, a class. Obviously, our teachers must have the capacity to evaluate and to integrate evaluation into the teaching processes, so that it is not just a matter of teaching a subject and then organizing an exam, but a continuous process.

In fact, in pedagogical approaches based on competencies and on learning phenomena, instead of subjects, this way of monitoring the learning process is built in. So it has a great deal to do with teachers' ability not only to teach but also to evaluate.

So that our authorities and those responsible for education policy can understand how progress is going, what the level is in general in the country or in a region of our country, they commission samples from the National Evaluation Center.

These samples do not work in such a way that schools or different regions are ranked by looking at where things are going better or worse, or so that they serve, as in some countries, for families to go selecting schools. They are informational and function as a basis for making decisions on how to develop the system or how to support schools.

As for the national education plan, for us it is the same as the national curriculum framework. Obviously, each Government has in its education plan the approaches on different topics or points, but the plan that is implemented in the schools is the national curriculum framework, with its local adaptation, with each school's adaptation, and finally with each teacher's adaptation in their classroom.

MS. SANGUINETTI.— Thank you very much to the delegation for being here. The presentation was extremely interesting. The truth is that when one sees that roughly every ten years you have carried out curricular reforms, a country like ours, which has faced such strong resistance on this subject, is left wondering whether you, absolute reference points in educational matters, have accompanied other countries in these processes and whether you have any examples in that regard.

MS. AHVENJÄRVI.— At present we have several entities. Normally they are universities with their international operating arms that have indeed taken part in curricular processes in different parts of the world, in educational contexts very different from the Finnish ones.

Also, in Finnish international cooperation, education plays an important role, and we have experts working in different parts of the world on this type of process.

THE CHAIR.— I was going to mention this at the end, but Senator Sanguinetti's question comes at just the right moment.

I invite you to review the dossier that the Embassy of Uruguay in Finland sent us—this can also be expanded afterward by the Embassy of Finland in Buenos Aires and, of course, by the consul and his assistant—which indicates that there are several agreements under way on educational matters between Finland and Uruguay.

First, we have an agreement among the ANEP, the ANII, and the National Agency for Education of Finland on these topics, which is in force today.

Second, there is another among the Ministry of Education and Culture, the University of Finland, and the Joensuu University of Applied Sciences. Ms. Emilia Ahvenjärvi was speaking about her experience in the universities of applied sciences. This agreement is also in force. There is also an agreement between the Ministry of Education and Culture and Midufi, an entity that, as I understand it, has to do with internal relations, bullying issues, and so on.

Third, there is an agreement between the UTU and HAMK—Häme University of Applied Sciences—from September 2019, which is also in force and in which the IDB, Inefop, and UTU itself take part.

Fourth, two Finnish experts worked in the seminar New Directions—which had a first part and may continue—organized by the MEC.

In addition, a seminar was held that left several lines of work between the ANEP and Eurosocial, with the participation of the Finnish Government.

Then Kouvola and the National Agency for Education of Finland—Edufi—are working in Fray Bentos on a project that is in force and under way.

On another front, we have Eduexcellence, which is a joint effort among Inefop, UTU, and three Finnish universities: Metropolia, Haaga-Helia, and Laurea.

Then there is another agreement that involves all of our educational bodies and the National Agency for Education of Finland. This institution is participating actively with the Ministry of Labor and Social Security, Inefop, the ANEP, UTU, UTEC, the PIT-CNT, and so on.

There are also other special projects that I have heard a lot about, for example, the one relating to timber. I understand there are already concrete projects operating here.

We have a collaboration between LUKE—the Natural Resources Institute Finland—and the INIA. And it certainly must have points of contact with us!

The University of Eastern Finland—UEF—is also working on projects with Uruguay.

We have the Joensuu Science Park working with UTEC, the firm UPM, companies in Tacuarembó, and the INIA. I have also heard that there are several projects being worked on thanks to this agreement.

And I will stop here, but there are others.

I had left this point for the end, but Senator Sanguinetti's question came at just the right moment, because there are many things being done. We do not intend to interfere under any circumstances, but we cannot fail to help coordinate. Every time I have been invited to any of these occasions, they talk to me about this. So what can be done from this Special Commission on Futures is to help make concrete some things that sometimes remain pending for lack of resources, momentum, or coordination and that the bodies that are working today are very interested in continuing and promoting.

That is why we must try to ensure that the event we are going to have in October goes beyond what might be a summit of commissions on futures, because there is an enormous number of projects under way here and we can use that occasion to facilitate, enable, promote, and drive them.

So we thank, then, the Education and Science Counselor at the Embassy of Finland in Buenos Aires, Ms. Emilia Ahvenjärvi; the honorary consul, Mr. Andrew Cooper; and the consulate's assistant, Ms. Tarja Laaksonen, for their presence this afternoon.

The meeting is adjourned.

(The time is 16:27).

Montevideo, Uruguay. Legislative Branch.