

## Challenges and Opportunities in the Israeli Economy

Given on January 30, 2020 by Eran Nitzan, Minister of Economic Affairs, The Embassy of Israel to the United States as part of the Mossavar-Rahmani Center for Business and Government at the Harvard Kennedy School's weekly Business and Government Seminar Series.

Speaker 1: Welcome to the Mossavar-Rahmani Center For Business and Government at the Harvard Kennedy School. For more information on events, news and research, visit [www.mrcbg.org](http://www.mrcbg.org).

Scott Leland: [crosstalk 00:00:28] Good afternoon everybody. I should say good morning still, it's not quite noontime. Thank you for being here. My name is Scott Leland, I'm the executive director of the Mossavar-Rahmani Center for Business and Government, which is hosting today's session.

Scott Leland: I am going to turn this over pretty quickly to Yair Pines, who is one of our senior fellows at the Center for Business and Government, and a colleague or former colleague of Eran Nitzan. And he will introduce our speaker for today. Yair Pines as a senior fellow is here for a year, with an appointment doing a research project looking at more open and inclusive housing within Israel. And with that as a quick introduction, Yair.

Yair Pines: Thank you, Scott, I am happy to present Mr Nitzan. Eran served as a minister of economic affairs for the Ministry of Finance at the embassy of Israel in Washington DC. Before the diplomatic job, Eran served for four years as the deputy director of the National Budget Division of the Ministry of Finance in Israel. He also served as the chairman of the National Zoning Committee, and was one of the senior partners in the Israeli government, did reforms for housing crisis and the cost of living.

Yair Pines: Eran is a policymaker with lots of experience, with specialty in real estate, industry, communication, [inaudible 00:01:54] local authorities. And Eran, thank you.

Eran Nitzan: Thank you, Yair. Good afternoon. Great to be here. Thank you Scott, and thank you Yair, for this privileged and great opportunity to be here at the John F Kennedy School of Government. I'm the Minister of Economic Affairs. As Yair said, previously I have been the deputy director of [inaudible 00:02:21] department. All my life career I've been in the policymaking arena, and it's just great, and a great privilege to but here, so thank you Scott.

Eran Nitzan: I'm going to discuss today some of the macroeconomics overview of the Israeli economy. But I won't spare with you some of the challenges that we tackled back home as an economy. And I would like finally in a brief way to speak about some of the major breakthroughs that the Israeli economy, the Israeli state, has experienced in the last two decades, that actually enable the economy to become a 21st century economy with a bright future. [inaudible 00:03:04]

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- Eran Nitzan: I'll try this one. Let's see how it goes. No, like that. Yeah, all right.
- Eran Nitzan: So let's start with the numbers. The Israeli economy GDP is about 1.4 trillion shekels, which represents \$400 billion. If you take it into the per capita, we speak about \$40,000 pretty year per capita. Which is not too bad for a tiny economy, nine million people, an isolated economy of course, that reached into the average of the European countries.
- Eran Nitzan: We enjoyed great growth of more than 3% lately, like many other countries, like even here in the United States, and really low unemployment rate, historically low, it's less than 4%.
- Eran Nitzan: Speaking about the Israeli economy, it's all reflected by the previous recessions that we all faced, at the global crisis that we had the privilege to respond quickly to, and to rebound quickly. And it's two policymaking thinking that enabled us to do that. The first one is the monetary system in Israel. The banks are quite conservative, they didn't allow mortgages to people without real ability to return them back. So we didn't get hit heavily from the real estate sector point of view
- Eran Nitzan: As for the fiscal policy, this is a hint for your audience as the policymakers of the future. What actually we have done in the fiscal policy to overcome the crisis was ... nothing. Remember that. Sometimes, and it was a huge and enormous pressure on the treasury to start to refunds, political and governmental plans to help, the huge crisis all over the world, we need to put resources and allocate resources to start, and governmental plans. Nothing actually has been done.
- Eran Nitzan: And I want to share with you that I think here in John F Kennedy, if I may I have a small suggestions, you have to put a big sign here saying, "Sometimes do nothing." By the way, it's really hard to do. It's really hard to do. You have a minister, you have all the media around you. But many times as policymakers, the right thing to do, and the hard thing to do, is just do nothing.
- Eran Nitzan: And I think we had privilege then, this is what we translated back to our political level, that were strong enough to hold themselves for these 12, 15 months. And with our finance system, we could overcome the crisis quite quickly.
- Eran Nitzan: That definitely determined the fact that the real estate prices in Israel are really high now, because people had the money, they didn't suffer the crisis. And the stock exchange are quite high as well. But it's part of life, you can never get all the upsides, there are some downsides as well.

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Eran Nitzan: As you can see, as part of this rebound and fast rebound, our GDP growth is one of the highest among the developed countries. Not only one year, but ten year. And this is the fact that we overcome the crisis very, very fast.

Eran Nitzan: Another phenomenon in Israel is the unemployment rate. The unemployment has steadily decreased in the last two decades. And here we come to do things. Not don't do, but do things. The Israeli government has huge reforms that have been done in the welfare payments, that in many ways attached them into employment. So it incentivized people to go out and work. And as you can see, the unemployment rate has decreased.

Eran Nitzan: And you don't see it here, but the participation rate at the same time was increasing. So it's a huge success of policymaking that had this outcome. And I'm not sure about you guys, but I do remember our economy and many other economies around 10 and 12% of unemployment. Believe me, it may be the most important macroeconomic data. It destroys lives of people, the government cannot handle that quickly, there's a huge problem. We all forget about unemployment problems. But we overcome them as part of the policy that we focused.

Eran Nitzan: Israel is quite relatively a small economy. That means that if you want to explore the economy, any tiny economy in the world, you have to look at this data of the ratio between debt and GDP. And as Yair described, we have been colleagues in the Ministry of Finance. That is the ultimate outcome of the Ministry of Finance policy in the very last two decades of policymaking.

Eran Nitzan: We have determined through the parliament a bunch of laws that sealed the governmental ability to extend expenditure. We have forced a couple of laws in the government to control the annual debt, year by year. And the outcome would be to reduce that ratio of debt to GDP.

Eran Nitzan: And why it's so important? Because in our world now, there is no monetary tools anymore for central banks to roll. We're all going to face a recession now, one day. From some reason, whether it's corona or other reasons.

Eran Nitzan: Now we are in a unique historical position that was not written in any textbooks in economy, in which we have a decade of low interest rates. That means that the one, and the only one who had to tackle and create a policy to tackle the recession in each country would be the fiscal side. The governmental side, the one that has to go to the parliament and force a political agenda, and try to make all things through the laws. It's really, really hard to do.

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Eran Nitzan: So by determining this ratio, we do know that at least the government will have the resources to force some kind of policy to take the Israeli economy out from the next recession that takes place. And there would be no governor, no central bank, who could reduce and cut the interest rate. Not here in the United States, not in Israel, and not in many other developed countries.

Eran Nitzan: That's what makes the next recession, now I'm speaking as an economist, really dangerous. Do you remember that during 2009 the central bank of the United States cut the interest rates in 5% in one day. To fuel the markets. There will be no opportunity to do that next time, and that is why you have to force government to accumulate power through low debts. So in the one rainy day they will have the resources.

Eran Nitzan: And they will avoid the vicious circle where you need to find new resources when the revenue from the taxes has declined. If you don't have that, you have to raise debt, and debt is really expensive. This is a vicious circle that countries, governments and economies might enter to. And we created the best atmosphere for the Israeli economy to tackle the next [inaudible 00:11:05].

Eran Nitzan: The last that I want to show you, dramatic one, that changed the Israeli society, economy, country, from one side to another, would be the export issues. Look what a dramatic change has become in the last 40 years, both in the increase of the export, but the combination. It started 40 or 30 years ago only by goods, and now the combination of goods and services, almost half of our exports is services. And this is of course the story of the startup nation that's behind that fact.

Eran Nitzan: It's crucial, crucial, for small economies, like many others in the world, and Israeli as well, to be part and integrated to the global supply chain. This is why we're heavily dependent on the global institutes. And this is why countries like Israel and many others, are worried about the tension of the trade war of course between United States and China. We need those institutes to work well so countries like us can participate in the world regime, in the world trade.

Eran Nitzan: So to conclude the macroeconomic point of view, everything could not be better. You have unemployment rates really low, no inflation, a great ratio between debt and GDP. So if everything is so okay, what are the problems? I'm not in the PR sector. I will describe you some of the two dangerous things that we have to tackle, and some threats that may emerge from under the surface for the Israeli economy and society.

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Eran Nitzan: And the first one would be a huge socioeconomic gaps inside the Israeli society. It's quite a new phenomenon for us. Unlike in the United States, where you have it for 100 years. Israeli society used to be quite an equal one, quite closed one as well. But the one thing that happens when you open an economy into the world, is creating these gaps.

Eran Nitzan: There are people who have the talent, the ability, the tools to participate the world trade arena. They can fly to the United States and come here to Boston and create a great startup. There are many people who cannot. So suddenly we tackle and find ourself in a new social unrest and gaps inside the Israeli society.

Eran Nitzan: There are two minorities in Israel who suffer from that specifically. The one minority is the Israeli Arabs, that are almost 20% now of the Israeli society. And the other group is the ultra-orthodox Jews. Those minorities do not participate in the Israeli economy in a deep sense.

Eran Nitzan: Now look at 2016. This is not estimation about the Israeli society. These are facts because it's based on the first grade of the Israeli education system, [inaudible 00:14:24]. We already know how the Israeli society will be combined in about 30 or 40 years. And nothing will change that.

Eran Nitzan: So we're definitely on a way, on a path, where half of the Israeli society would be combined from Israeli Arabs and ultra-orthodox Jews. So it would be, and I'm rephrased that, as the single most important challenge to the Israeli governments, would be to narrow the gaps, would be to increase the participation of those minorities into Israeli society, in the Israeli economy.

Eran Nitzan: And this challenge will determine whether Israel will continue to be an advanced economy or not. No less. That is the biggest challenge ever, it's really really hard to do. Now I had the privilege, I think Yair as well in his job, to work with many Israeli Arab leadership. I'm really optimistic about the ability to increase the participation inside the Israeli economy. There is a huge crave and desire from the young leadership and young Israeli Arabs to do that. They all want to have the great education for their children, they all want to fly to ski resorts in Austria. They all want to have the good life.

Eran Nitzan: And there is a huge desire from the Israeli governmental side of course, because you want to improve your economy. This is the weakened point it can work with. So when both sides by the way, speaking about public policy, have desire for something, usually it happens.

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Eran Nitzan: The ultra-orthodox community in Israel, it's much more complicated. It's very hard to explain. Because we're dealing here with ideological poverty. I don't know if you heard that. These people, they don't have any desire to take part in the secular world, take part of the economy. They don't fret or desire their children to get out from the poverty schedule.

Eran Nitzan: And that has been fueled by political leadership as well, those communities. So there were many attempts, and there will be many attempts, of the Israeli government to incentivize ultra-orthodox to go and educate their children, and go to universities. And incentivize people to hire ultra-orthodox. Like many other attempts have been done by the government. Many of those attempts have failed.

Eran Nitzan: There is one optimistic point if I may, from my point of view, for the story of the ultra-orthodox, and that would be this. At the end of the day, the technology does penetrate into those societies. At the end of the day, young people of these minority, of the ultra-orthodox, are being exposed much more than their parents and grandfathers about the real world outside their neighborhood that sometimes they never leave.

Eran Nitzan: And we deeply believe that it would be very hard for their political leadership to continue and abandon this information. Now anyone can practice a religion in a way they want to do. Ultra-orthodox lives here in Boston. They practice a religion the way they think they would like to do. But that doesn't mean that you don't have to be a productive citizen. That doesn't mean that you don't have to contribute to the society you live in. That doesn't mean that you cannot go and have job and bring your family the right resources to make the right decisions.

Eran Nitzan: So that is by far the biggest challenge we face, and one of the problems that we have in Israel. The second, which is of course part of that, would be the education system. Now look at that. At the bottom line, you can see that Israel is way behind the scale, the [inaudible 00:18:29] scale of the OECD, whether it's reading, science and math. It's interesting to see who are the first, by the way. Now these are the 2015, I think they are now the 2019 records, but there's not dramatic change.

Eran Nitzan: That data means we endanger, if I may, the human capital advantage that Israel has. Understanding that the Israeli economy will thrive through the startup industry, we need to prepare our people for the next workforce. Now that is a huge challenge to do. Nobody knows exactly how to do that. But with these results, we definitely cannot do it. We have to improve the education system.

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- Eran Nitzan: We have to increase the prestige of the profession of teaching. We already increase the salaries. Everybody speaks about salaries. All right, new teachers, they got better salaries now than they had 10 years ago, and we can improve that. But it's not only about money.
- Eran Nitzan: It's about, for example, to incentivize good teachers. It's about the flexibility of hiring teachers. It's about the curriculum the teachers and managers of schools could determine that they want to teach, and what they want to teach. Centralized, determined nowadays by the Israeli Education Ministry.
- Eran Nitzan: And for Israeli society, a specific condition, when we're still in a process of establish a new economy, a new society, a new country, you need the solidarity, you need the ability, you need the pupils to be much better prepared for the next challenges. And definitely there are some huge reforms that need to be done to the education system in Israel.
- Eran Nitzan: So the challenges of minorities and the gaps inside Israeli society, the participation in the economy, and the education system, will actually determine heavily our future.
- Eran Nitzan: Speaking about challenges, there are still some huge breakthroughs that I want to show you. Which makes me and many others really optimistic about the future of the Israeli economy. The first is about the currency and the reputation of Israel as a startup nation.
- Eran Nitzan: Meaning a startup nation, just to who you in numbers, being a startup nation means to be the highest concentration of startups, for example, outside of Silicon Valley. Lately Tel Aviv was ranked as an ecosystem for startups, 16th of world, right after outside here, right after Boston. Tel Aviv. Tel Aviv was established 70 years ago. Tel Aviv 20 years ago, you could find nothing in Tel Aviv 20 years ago. Some great nightclubs, we can speak of that later on. But nothing from tech industry. And that revolution really is amazing revolution.
- Eran Nitzan: We have today, look at that. Second only to China, regarding the number of foreign companies listed in NASDAQ. More than the UAE and Canada combined. Now there are some reasons for that, but it definitely reflects the ability, the desire of Israeli companies to go and to become multinational companies about and here in the United States as well.
- Eran Nitzan: We have the highest concentration of engineers in the world. Higher than anyone else, followed by the United States, in dramatic numbers. And that is

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due to of course, we've been fortunate enough to get a very skilled immigration wave from the former Soviet Union. 20 years ago, well educated people. But more important than that, because the first wave of immigration suffers. But these parents, these Soviet Union people, Jews coming to Israel, they educated their children of the importance of education, and education values. And now they are the engineers in what we call the startup nation.

Eran Nitzan: There was of course some of the elite IDF units that prepare our young people in really skilled and quality training abilities. And there are some qualities inside our, we spoke about the education systems, there are definitely quality public universities, especially in engineering, in Israel that enable that number of engineers.

Eran Nitzan: And last but not least, look at that. Highest in the world in R&D investment. This is a combination of both the governmental grants, the private market. The highest in the world. By the way, there might be some limit here. There could be too much R&D. I'm not sure we've reached there, but we're highest in the world in the R&D. And that does reflect the fact that there is some vibrant high-tech industry in Israel that enabled the reputation of a startup nation.

Eran Nitzan: And just to show you, there are many ways to show it, but look at that. That is a map of the Israeli companies only on fintech. There are different sectors of the fintech, I'm not an expert for fintech, but look how rich it is. You cannot find any sector in the fintech sector that you don't have dozens and dozens of Israeli companies, or multinational opening R&D centers for these sectors in Israel.

Eran Nitzan: And the richness of that is just impressive. We have more than 6000 different startups in the different fields in Israel. And that is a bottom line. If you are multinational in the world, leading industry, the biggest challenge you face in the 21st century will be to innovate. Will be to take your projects, whether they're cars or soap or food, and innovate them into the 21st century.

Eran Nitzan: And you definitely as a board of directors will make a decision to open at least one R&D center for that proposal in Israel. Because everyone done it. Two months ago Ford have done it. Ford, the car industry. What they could find in Israel? Well they opened an R&D center of course for self-driving cars.

Eran Nitzan: And now I must say that beyond the economic implication of that, we are proud that the startup industry in Israel influenced hundreds of millions of people all over the world. We couldn't have, when you export oranges, 30 or 40 years ago, you could influence the people who ate the oranges. Now look what we have in our life now.

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Eran Nitzan: Of course the irrigation, and drip irrigation, and the agriculture that we all know. The cherry tomatoes that we all eat. Or the navigation system that we drive with day by day are based on Israeli technology. Our cellphone, our Pentium inside our laptops. Our USBs. Any significant technology breakthrough was involved in many aspects, not any but many of them, have been involved with Israeli industry, and Israeli names are part of that.

Eran Nitzan: So we try to say and we try to show, that creating Israel as a startup nation, meaning not only benefits for Israel, of course it is, but for the world. We are now in the agrotech industry in Israel trying to solve the problem of hunger in Africa. And we can do it. We can do it.

Eran Nitzan: The second breakthrough would be the energy sector. Now anyone who would sit here a couple of years ago and would analyze the Israeli state, it would take him five minutes to say there is one big weakness inside the Israeli state, and that would be the energy sector.

Eran Nitzan: Since it's established, Israel, what it witnessed was the fully dependence on imported energy. Think about that. Many of you living here in the United States, many of you, yet you fully depend on ships coming and bringing oil. Much more complicated when for example the security becomes complicated, it's much harder to do.

Eran Nitzan: So it's a huge witness. And we had some accumulated giant tanks for that, but everybody knew that it's really really ... And it seems to be part of life. This is the facts. And then we have this. 15 years ago, when 30 trillion cubic feet of natural gas was discovered on the coastline of Israel. That would be enough to have 100 years of energy in Israel. 100 years.

Eran Nitzan: Now we don't use that only for the Israeli needs, and there is a long process back in Israel in which we actually authorized to start and export natural gas. And here we are, two weeks ago, for the first time, Israel started to export gas to Jordan and to Egypt. That was unthinkable 10 years ago. From fully dependent on energy imported to Israel, we are now an exporter of energy, and we export for our neighbors. Think about the implication of that for the geopolitical situation, for our relationship with our neighbors, for the common interests that we have in the area.

Eran Nitzan: The enabled the Israeli economy to have cheap energy. That enabled the Israeli economy to have clean energy. And it enabled Israel to take resources from that. We [inaudible 00:28:50] if you learned about that, and not use the revenues for the day-to-day issues, but accumulate them into the future

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infrastructure that will be needed from the Israeli state. So all the revenues we'll have from the natural gas will be used for infrastructure for the next generations as well.

Eran Nitzan: So we spoke about the reputation as the startup nation, we spoke about energy. So last sector, the last breakthrough, we be another weakness that we suffered from, and it would be water. It's hard to explain when you sit down here in Boston. But in the Middle East, water is essential issue. Even before Israel, all the region suffers from dry [inaudible 00:29:34]. Again and again and again.

Eran Nitzan: Think about Syria. T fact that the rural areas were drawn down, flooded millions of people from the rural areas of Syria into the cities of Syria, started to cause this social unrest, that was the seeds of what later got into that tragic civil war in Syria. The implication is not only in Syria, it's millions of refugees coming to Europe. Many analysts take the Brexit as outcome of the immigration wave. It's not me saying that, it's articles I've been reading and hearing. Harvard JFK university school.

Eran Nitzan: There is no war in Egypt. In Jordan, [inaudible 00:30:21] they are day off and day on in water, fresh water. So the bottom line is that Israel has overcome that totally. I'm not speaking about plans that we have to 2030, I'm not speaking about proposal, I'm not speaking about what we want to do. The fact is here, 2020, we are fully not dependent on Mother Nature for fresh water. We're not dependent at all on Mother Nature to irrigate our agriculture.

Eran Nitzan: 80% of our drinking water comes from desalinization plants on the Israeli coastline. 80% of the drinking water we drink have been seawater that's been desalinated. And 80% of our wastewater in Israel is being reclaimed back to the agriculture sector. Usually in Israel, you flush the water, you can say, "Hey, see you soon." Because most of the water goes back to agriculture.

Eran Nitzan: That causes some problems, by the way. We have, I work in the Israeli embassy in Washington as an economic attache, and we discuss economic issues with our fellows in Washington. They've been amazed by this now. They tried to claim 2% of the wastewater in the United States, this would be really hard. It's of course not controlled by the federal level, in many ways by the states and cities. We sat down with Utah, with Arizona, they tried to understand how did you do that?

Eran Nitzan: By the way, speaking about policymaking, the only fact that enabled us to do that was a huge crisis. Okay? Seek for the crisis all the time if you want to change something. Actually there was no other option.

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Eran Nitzan: Israel during the 90s was drawn down. There was some discussion in the Israeli government about importing fresh water from Turkey. Think about that. There was no fresh water to drink. So usually in democratic systems, when it's hard to make decisions, they need to feel the necessity. It was a huge crisis, and then the resources been allocated first for the reclaiming waste water, and then later on for desalinization water.

Eran Nitzan: But the fact is that it was a huge crisis that threatened the Israeli future, that threatened the Israeli economy system, threatened the Israeli society that we've totally overcome.

Eran Nitzan: So to conclude that, and before I'll thank you and we'll one for Qs and As. I tried to show some of the great numbers we have from the macroeconomic perspective. Which are great, couldn't be better, but never go only for the statistics if you want to explore a market, if you want to explore a country, a society, an economy.

Eran Nitzan: And I took you through some of the huge challenges we face. Nothing is perfect. The dangers we have to face in order to preserve our advanced economy. And they are huge, they are hard to tackle. And we can be optimistic that we will do that.

Eran Nitzan: And then I took you through the three breakthroughs in the last two decades. So startup and the big data revolution. The energy sector that become not dependent anymore on importing energy to the Israeli market. And the water problem that we totally overcome.

Eran Nitzan: All that, armed the Israeli economy with all the tools that we need to tackle the 21st century economy. And nowadays, Israel works to lead the AI issues. Quantum computer issues. Cyber threats that we work with our colleagues in the administration here, and we have unique technology and companies and abilities inside of Israel. Climate change. Israel can become a leader in climate change.

Eran Nitzan: So all this makes us really optimistic about the bright future. It's going to be a digital future. And you couldn't be in a better position than Israel is right now to take a breakthrough in that new economy. So thank you very much, and I'll be happy to have a [inaudible 00:34:51].

Speaker 1: Maybe I'll start with a question. First of all, thank you very much, this was a fascinating presentation.

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- Eran Nitzan: Thank you.
- Speaker 1: It's a great narrative, a wonderful story that you had to tell. I want to go back to the demographic slide though and ask you about the growth in the ultra-orthodox community. Because it's really quite striking the percentage increase out of the total population over the past 20 or 30 years.
- Speaker 1: And I guess the first question is, is that precipitous increase in that population, is it due to immigration, is it due to increased birth rate? And if you had to project beyond, I think your slide went up to 2059, is the percentage likely to increase even further beyond what it will be 40 years from now?
- Eran Nitzan: Yeah. It is the highest fertility rate. Part of it being determined by welfare payments being done by the government because of political structure. Unlike the United States, we have a rule of coalitions, it's not a presidential one. The presidential system is zero/one, the winner takes it all. In Israel it's much more complicated, it's more the British way, that you have to create a coalition.
- Eran Nitzan: And the fact is that it seems to be really hard to create a coalition back in Israel without the orthodox voters. And their leaders and political leaders save all the benefits for those high fertility rate families.
- Eran Nitzan: We are sure, we know that from the United States, that families and parents that participate from the workforce go and work, and I'm not speaking about the way they practice religion, they would change their way of creating their family. At the end of the day. Like we saw, by the way, with the Israeli Arabs. That we used to be families of six and seven children, now we are the rate of the rest of society, about two to three children.
- Eran Nitzan: We are sure that the ultra-orthodox community will change its behavior as well as it will integrate into this other world, the secular world, and the [inaudible 00:37:08]. But it's a fertility issue. Ideological one, by the way, ideological one. That is why it's so hard to tackle.
- Speaker 1: Thank you.
- Eran Nitzan: Please.
- Speaker 5: On that same slide, you mentioned while presenting this, it sounded like there was demand on both sides, from the Arab minority as well as in the Israeli government, to want increased participation in the economy. I was curious your

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perspective on what's the binding constraint there. If both sides want something to happen, what is preventing something from happening?

Eran Nitzan: Mostly it's about education and skills. There are huge gaps, even in the education system with Arab minorities in Israel. The infrastructure, for example. So improving now the education system inside the Israeli Arab cities and villages. And awareness. Awareness that there are barriers that we have to destroy, and that we can hire Israeli, well-educated, new, young Israeli Arabs, is a process that is needed.

Eran Nitzan: In the 30, 40 first years of the Israeli state, there was a huge political tension between the Israeli Arab minority and the Israeli state. Now it's actually, and this is a lesson I've learned, it's all disappeared. And there is only great people, and talented people that want to integrate. And being integrated, year by year. It's never been by revolution, it's evolution.

Eran Nitzan: But as long as this goes into a better place, and it goes from year to year, the process cannot be stopped, and it just improves. So it's a matter of being educated and go to learn the right thing, and to have the skills to go to the higher education. And it's a matter of most of the Israeli Arabs live in the northern part, so their businesses has to be created in the northern parts. And there are businesses now created in Azerit, in other places that hire Israeli Arabs, work together with other Israelis. And it has implications way beyond economy of course. So the minute you integrate with someone, all other barriers disappear, and that is why I'm so optimistic about it.

Speaker 6: Excuse me, you brought this paradox where you've got a lot of startups which have science and technology base, but then Israel is way down where math and science skills are concerned. Why is there that?

Eran Nitzan: It's the biggest and most important question here. It definitely endangers the position of Israel as an advanced economy, and a well established high-tech industry in Israel. And we need to improve the skills of their pupils.

Eran Nitzan: You know I want to tell you a story about the PISA tests. As you can see, our pupils were not the first to lead in the world. You had quite poor results. But the last question in PISA is really interesting one. You know what is it? You've been asked as a pupil, how do you think you made, how do you think you've done? Innocent question.

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- Eran Nitzan: Well imagine who were the first in the world in the grades they gave to themselves. It was the Israeli students. I'm sure they were great. And you know who was among the last one? It's the Japanese, who made great. So there is something about the education system in Israel which is wrong, and brings this poor result, and has to be solved.
- Eran Nitzan: We have to break the unions, we have to bring the flexibility, we have to increase the profession of teaching in Israel, make it the most important profession, definitely. But there is something in the secret sauce inside the Israeliness, which is a bullness, a chutzpah, there are many words for that, that you can tolerate failure. There is nothing wrong in establishing a startup and failing as well. So there's nothing wrong in being wrong.
- Eran Nitzan: And it's a part of the culture. So that is part of the explanation, how can this poor result become a high-tech industry here. But it definitely needs to be in our awareness, that without solving the education system as you saw, we cannot continue and hold this advantage for much longer. Please.
- Speaker 7: I have too unrelated questions. The IDF is central to the startup nation, I think. Do Arab-Israelis serve in the IDF, and are they given that opportunity, and do they want to? And second, you threw in climate change at the very end. Where is Israel? I was sort of disappointed to find natural gas, because I was hoping you'd be on the innovative edge on alternative energy.
- Eran Nitzan: Sorry for that.
- Speaker 7: But what are you doing in that in terms of either batteries or other alternative energy?
- Eran Nitzan: What was the first question?
- Speaker 7: First question was Israeli Arabs and the IDF.
- Eran Nitzan: Yes. Unlike me, for example, that was, nobody asked me, went to the army. There is no obligation for Israeli Arabs to go to the army of course, but they definitely can volunteer to the army, some of them do that. Most of them don't.
- Eran Nitzan: There is a debate about maybe we will force Israeli Arabs, not to go to the army of course, but maybe go to the civil service, something to go to hospitals or something like that. But there is a debate about that, hasn't been decided yet.

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Eran Nitzan: So definitely the opportunity through elite IDF units is not an open opportunity for Israeli Arabs most of the time. But from the other hand if I may, they do have some advantage, because being 18 after high school, you can start work or go in the higher education system, where the other Israelis has to go now for a couple of years to the army. So I'm not trying to say that it compensates about that fully, but these are the facts now living in Israel.

Eran Nitzan: As for the climate change, we are a coastal country. Most of our cities on the coastline. We are fully aware that the raise of the sea level and danger of what we know [inaudible 00:43:35] now. Me myself, I would be in Jerusalem, in the mountains. Just kidding.

Eran Nitzan: But there is a great awareness. Now I want to say, take the water issue that we had for example. No one in the government, I'll tell you a secret, no one knew that Israel would development eventually a [inaudible 00:43:59] system like we developed. Nobody aimed for that. We just increased the awareness for the water problem, we reallocated resources to huge governmental projects, and together with that, that brings the energy, the young people, the talent in to start and search this area. And then suddenly they create a startup, now they work all over the world, in Israel too.

Eran Nitzan: I think in the climate change we are in the same position now. There are some governmental decision to make clean energy, including the gas by the way. And the hype inside the young scene, the young people, to create startup for helping climate change. So it's of course a mission that won't be solved by Israel. It's a world, huge challenge.

Eran Nitzan: But you'll find Israel on the spectrum of the need to tackle the climate change challenge, you'll find Israel on one of the most advanced economies. Having said that, it's quite easy for us. It's not that I want to prefer us to the United States. The emissions, the CO2, whatever we create it's a tiny amount anyway, because we're such a small country, and we don't have too much heavy industry that have all the problem that it cause.

Eran Nitzan: So it's easy to us, if I may, it's easy for us to be advocates for climate change. I fully understand why economies like the United States or other face bigger challenge and maybe need to make much difficult decisions than we have to do. Yeah, please.

Speaker 8: So Tel Aviv has sort of embodied this idea of the startup nation perhaps, and you said 20 years ago it was entirely a different situation.

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- Eran Nitzan: Yes.
- Speaker 8: So I'm just wondering, aside from government R&D, what other kinds of policies, or what else has happened in order to lift Tel Aviv to the status that it has so high up on the worlds listing of startup cities.
- Eran Nitzan: You mentioned the governmental grants. Let's not take too much credit for that. It's good to have, it's nice to have, it hasn't come like that. Some of them maybe, but it's more about special need. We didn't have any natural resources, people, young people, talented people, educated people, we had fortune enough to be there with them in the beginning of the data revolution that we all experience now.
- Eran Nitzan: And one of the advantages we had was to be small. Was to be small. Everybody knew each other, everybody worked together. When I was being Ministry of Finance, we had a research, when I was dealing with industrial issues. Yes, young people from the startup industry, what else do you need from the Israeli government? You know you had a president who said these are the most dangerous words in the English language, what do you need from the government. You know who said that?
- Speaker 8: Reagan.
- Eran Nitzan: Yeah. So we asked this dangerous question, and we thought about taxes, we thought about incentive them, bring us grants. No, young people they don't care about anything. You know what they said is the most crucial for them? Just build great streets with a lot of coffee shops. That's what they need from the government. They need the atmosphere, they need the coffee shops, they need the scene of ideas.
- Eran Nitzan: And being a tiny population enabled to create these kind of hubs, enabled to create the incubators where people are open enough to share ideas, to hire each other, to think together, to fail. And I think this is a huge part of the ability of the Israeli ecosystem to modify itself from Jaffa oranges to Java, the software.
- Eran Nitzan: By the way, you'll determine about the time then, it's your responsibility.
- Speaker 1: I think we'll take a few more questions.
- Eran Nitzan: Please.

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- Speaker 9: I just want to ask what are the most successful startups in the past five years, beside mobile, regarding to the valuation?
- Eran Nitzan: Well really probably in the biotech industry in Israel, some of the breakthrough going there. And Israel health sector has huge problem, but there is a consensus that you have really high quality of knowledge in Israel, and great doctors. So it's a great place where you can create the health tech ecosystem.
- Eran Nitzan: The second breakthrough would be the cyber threat. It's a huge need all over the world, whether it's governments or commercial companies. And there is a huge experience in Israel, whether it's about military experience or being in defensive or offensive about cyber. That I would say, only started to be created and become one of the leading forces in the world.
- Eran Nitzan: Look we are, once again I'm speaking about how tiny we are. Two months ago I've been to Washington to the biggest summit of the cybersecurity issue. You had four nations. You had the United States, you had Canada, you had Britain and you had Israel. [inaudible 00:49:30]
- Speaker 9: Do you have specific company names of most highly valued companies?
- Eran Nitzan: No, not with me here. We do have, but I must say we try to stay on the governmental level, that's not about recommending about companies. Please.
- Speaker 10: There are elections coming up in Israel, and the outcome has a big question mark. Just from an economic policy point of view, can you comment what it might mean if there were a change of government leadership, or what you might anticipate in terms of macroeconomic policy changes?
- Eran Nitzan: Not too much, I must say. Most of the potential leaders are on the same page regarding the need for the Israeli government to go global, to be open, to reduce barriers, and to preserve the macroeconomic great picture that we have. We've been rated by the S&P for AA. No prime minister would like to lose this rating.
- Eran Nitzan: I think the biggest issue might be a change regarding, as we spoke about for example, orthodox. Whether you force them to start to educate their pupils for math and English and other secular subjects. Whether you cut the welfare to incentivize them to go out to work. That would definitely, as I show, it's a crucial issue, that might be changed by technology, and might be changed by

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government. I don't know, it definitely depends on the results of these elections. Please.

Speaker 11: Can you speak a little bit more to the geopolitical challenges to the Israeli economy in the area and how this is going to affect the growth plans?

Eran Nitzan: Well in many ways it's the same like here in the United States. I mean look at the stock exchange in the United States. In the last month, you took down one of the Iranian leaders. You can say that it would shake the world. You can see the stock exchange fully tolerated that.

Eran Nitzan: Drones from Iran bombed Saudi, and half of the Saudi oil company. If I would say that to Scott a year ago, he would say, "Okay, there is a war now [inaudible 00:51:45]." Everything would collapse. I mean we couldn't imagine a situation where you had this huge event, and first of all nothing really happened, and secondly the stock market didn't care.

Eran Nitzan: There is a detach between stock market and the markets into the political issues. It wasn't like that in the 70s, in the 80s, when everything was monetarized. I don't know why, maybe it's social media, I don't know. But the fact is that there is a detach.

Eran Nitzan: And in Israel as well. We suffered from time to time from security issues. But it's only a bump in the way on the Israeli economy, we can see the GDP doesn't differ. Of course if you enter into a very vicious circle of war it definitely will determine, we don't see that coming. So there is some tolerance in the Israeli economy, stock exchange, the markets, that are not part of the political crisis that we suffer from in the Israeli politics, and not part of the security bumps that we from time to time have.

Eran Nitzan: Please.

Speaker 12: Just expanding on that, if we asked, took a poll in Israel today, do people feel safer than they did five years ago, or less safe, given what's going on in the Middle East?

Eran Nitzan: It's a very tough question. First of all we have to answer what's safeness? Is it walking outside in the street in the night? You feel only safe [inaudible 00:53:11]. I mean it's my home, but I don't know if anyone has been here to Tel Aviv, there's no other safe place in the world to walk in, regarding crime and all that.

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- Eran Nitzan: But you ask about, I don't know, nuclear Iranian and other things. I don't know what to say. If Israel feels ... No, I don't think we feel safer. I can only speak about my experience. I think the world in this sense becomes more and more danger. But if I may, in many ways, I'm not sure if you agree with that, but even in America I'm not sure you're going to feel safer now.
- Eran Nitzan: This connectivity, this ability of echoing extremists in the net, makes our world less safe. And it's a challenge of our leaders. But first of all it's my personal feeling, and if I may it's bigger than the Israeli situation. I think it's any Western citizen in the world, we all have, not all of you, but I have children. I think the challenges that they will face will be higher than we did, harder than we did. And we faced challenges which are harder than our parents.
- Eran Nitzan: So sorry for that. But in many other aspects, life is getting only better and better, and improved economically, and all the challenges and all the chances that we have in mobility, and you can travel. So there are pros and cons. But I cannot translate that whether I feel safe. No. Me. Please.
- Speaker 13: On this slide, you seem very confident about this 35 or 45 year out demographic projection.
- Eran Nitzan: Yes.
- Speaker 13: What's the source of that confidence? Because if you went back 35 or 45 years, or 35 or 45 years before that, and tried to predict out those groups in Israel's population, you'd probably end up with a totally wrong [crosstalk 00:55:37].
- Eran Nitzan: I guess you're right about the 2016, if you would try to project on 2080. But as I said, there's a generation now in the first grade in Israel, and you can know exactly what the combination of these pupils are. And it's reflecting on this population. And we don't see for now, and I'm not sure it would change, any mobility inside those segments. We don't see ... Israeli Arabs will continue to be Israeli Arabs of course.
- Eran Nitzan: We don't see many phenomena where many of the ultra-orthodox have become suddenly traditional one or secular one. But that definitely will be a factor. I must say, it's a study where nothing changed.
- Eran Nitzan: If I may conclude for the public policy, you cannot know. History always surprise us, it has been surprise for many years, and will continue to surprise us. So all

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the projections as I said, it all could change in one day, in one 9/11, or one Iron Dome, or one I don't know change that we all experience from time to time.

Eran Nitzan:

It's a good reason to be optimistic, by the way, that you can never know how things will change eventually and will be okay eventually. And yeah, not to sound too pessimistic, as I've been sounding previously. I'm one of the optimistic. I think we got the safety, I think the chances of everyone is only increasing. I think the connectivity of the world, although the echoes of the net and the social media, I think the connectivity is a great opportunity. And every one of us has the opportunity now to influence and to fill his life with full way to fulfill himself.

Eran Nitzan:

If I may to conclude and say to you, dear students, leaving here, fulfill yourself. Don't hesitate to do that. And you'll have better tools than we had, and our parents definitely. And be sure that your children do have better tools than you. So thank you very much.