Energy Economics and Policy
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Week - 07
Energy Market: International Oil Market
Lecture - 03
Oil Market: OPEC

Welcome back, in this video we are going to talk about the formation of the Organization of Petroleum Exporting Countries in the 1960s. We are going to learn a little bit about their operation starting from 1950, 1960s to the recent years. We are not going to go into the great details of the operation of OPEC but this is just to give you a broad overview about the operation of OPEC, how they manage the market, how they manage the price. It has a lot of layers and if you are interested, you can go deep into the literature. I have posted some of the websites and links from OPEC’s website which have really useful information. There are a lot of controversies as well around the functionality of OPEC; however, we will try to avoid those. We will mainly focus on how exactly they controlled the production and price of the oil market since the 1960s.

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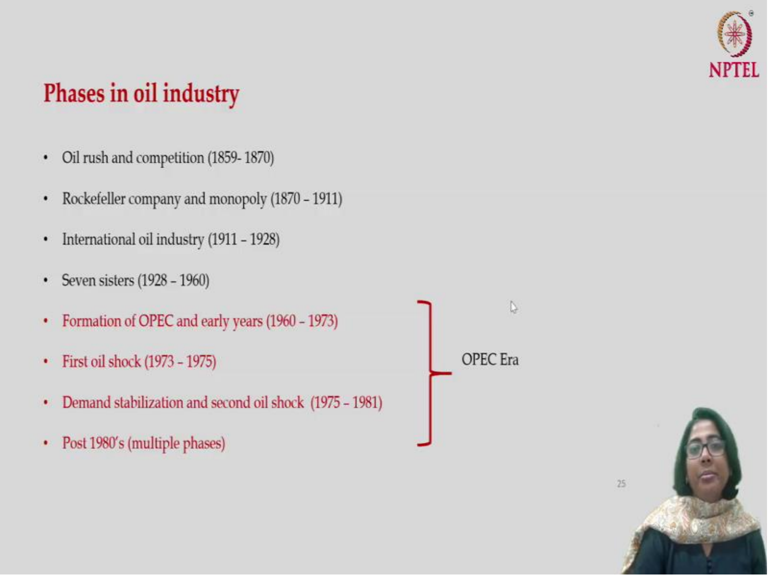

If you remember these phases that we discussed in the previous two lectures, we divided it into the pre-OPEC era and the post-OPEC era. In this video, we are going to talk about the era that the world experienced in the international oil market after the formation of OPEC in the 1960s. Here I have written it three but we have divided it into multiple parts.

One is the formation of OPEC and its early years which covers from 1960 to 1973; then we speak about the 1970s, where the world experienced a couple of oil price shocks. Then we discussed the 1980s where the demand stabilization came into the force and more power for OPEC was realized in terms of supply determination and price fixing. Then we also talk a little bit about the last two decades.

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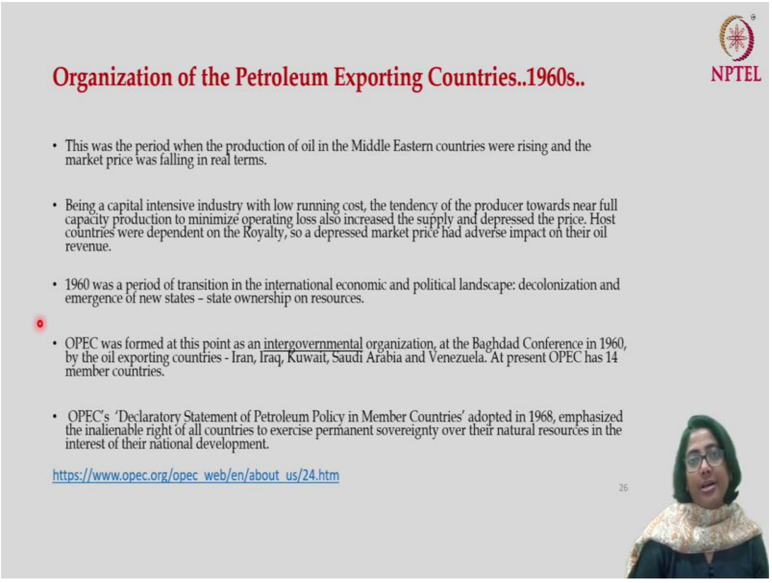

Let us first have a quick look at the genesis of this Organization of Petroleum Exporting Countries, that is OPEC in the 1960s. How did the world look like at that very point of time? We saw that in the early phases of the 20th century the oil market internationally was dominated mostly by the US and sometimes by Mexico as well.

However, in the middle of the 20th century there was a shift from the emphasis on the US and Mexico to the Middle East countries. We have already discussed how by that time the US became a net importer of oil instead of being the net exporter of oil.

The US was also looking for the sources of cheap oil. In the same period of time, the production and export of the oil grew because of Middle East countries and it was realized that the cost of production in these Middle East countries was much lower than the US. Therefore, slowly these

Middle East countries, since the beginning of 20th century started gaining sort of importance in the world international oil market.

If you look at the supply and price trend in the late 1950s or the early 1960s , this is the period where the production of oil was little higher, that is supply was a little higher as compared to the demand. It was marked by the era of falling prices. There was a supply glut and therefore there was a fall in the oil price in the market. We have also observed that the posted price was higher than the actual market transaction price. That was taking place because of several benefits given to the buyer by the seller of oil, for the long term sale,that is in order to ensure the sale of whatever they are producing.

Now why having a low price was very difficult for this kind of industry to sustain? If you again go back to our discussion in the previous week and the week before, we have seen, especially when we were discussing in the context of monopoly that these energy industries are the kind of industry where the capital cost is much higher and the running cost is relatively low. If an industry has this kind of cost feature, that is high investment and low running costs then in order to avoid or minimize the operational loss they usually have a tendency of operating towards near full capacity production. They want to produce as much as they can and they rarely follow the marginal cost pricing. This tendency of operating towards the near full capacity increased the supply in the market and also depressed the price.

Now this is the period where a lot of concessions were in place. Many of the foreign companies were operating in the host countries who had the reserve of oil. When there was a decline in price, automatically the revenue generated by these production companies failed. As a result, the royalty that they paid to the host nations that also came down and this adversely affected the revenue bill that was generated or gained by the host countries. At this point of time, everything was not going quite in favour of the producer of oil and oil products. If you look economically and politically, this was the changing landscape in the world.

So, where many interesting things happened at this point of time; there was a lot of decolonization which was going on in the world. Many new countries emerged with their new vision towards economy, new activities were supposed to come up and there was also a very significant emphasis on the point of nationalization. One form in which this was manifested was that everybody started arguing that this concession should go away from the oil market. It should not be the case that a foreign company should come and have the ownership of the subsoil natural resources, take it out, carry on the business and pay only the royalty to the host country. There was a lot of emphasis that it should go away. This is the period at which OPEC came up because these middle eastern countries realized that they can gain a lot from the market if they act together. Probably they can influence the price as well by targeting the supply. To understand the supplies you know, understand the demand and then produce accordingly.

Therefore, in 1960 the genesis of OPEC was the Baghdad conference and there were 5 member countries, who were the founding members of OPEC. These were Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. Now, Saudi Arabia and Venezuela are very important powers, so in OPEC it’s often said that the world price of oil is determined by the fact how much production Saudi Arabia is going to come up with. They are very important players, they have a lot of reserves, they supply a lot of oil in the world market and they have control over the price. However, I am not talking about the 1960s, at that point OPEC did not have a very significant dominance over oil price in the world market.

If you look at the present scenario there are fourteen member countries of OPEC. So, the member countries keep on changing, the new member countries come, sometimes you know, their memberships are cancelled or they withdraw from OPEC and so on. So, the founding founder members are constant these 5; however, the rest of the member countries keep on changing. Now as I have said that this was the, you know, the there was a supply glut, the price was depressing, everybody wanted to produce more; however, there was not much demand and additionally the fact is that the newly formed nations they you know, they came up with a strong idea of sovereignty and they wanted to you know, do away with the concession and the OPEC acted in the similar line at this point of time.

If you look at the declaratory statement of petroleum policy of the member countries that was adopted in 1968, there was a strong emphasis that was laid on how the countries should exercise their permanent sovereignty over their natural resources in the interest of national development. This is the genesis and this is how OPEC started functioning in 1960. Although in the 1960s OPEC did not have much power to fix the price in the world international oil market.

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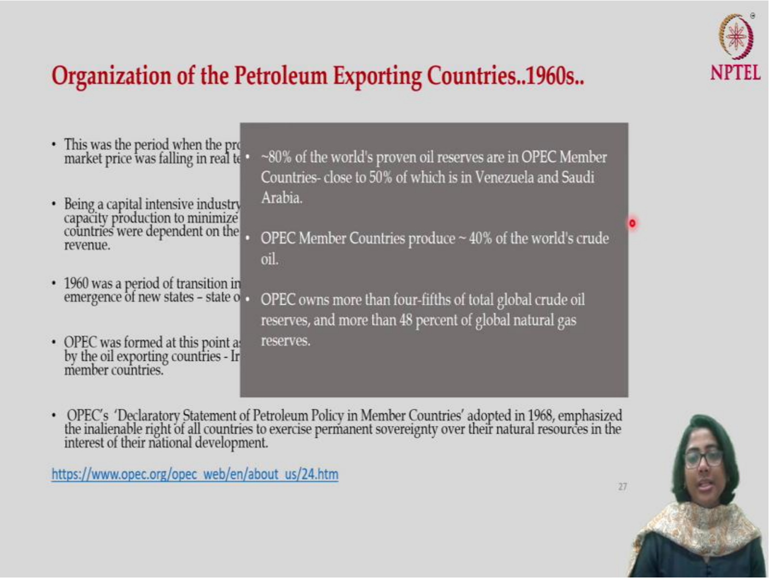

There are a few very important facts which help us understand why OPEC emerged as one of the very important and strong market power in the international oil market. Nearly 80 percent of world proven oil reserves are with the OPEC member countries and 50 percent of this 80 percent is with Venezuela and Saudi Arabia. That is why they are such big players in the oil market.

OPEC member countries produce approximately 40 percent of the world's total crude oil. So, they have a dominance in the production sector as well. They also have a very significant share in the export. Although in recent times the share of OPEC in export has been declining and that has become a point of concern for the OPEC member countries in recent times.

Finally OPEC not only plays in the field of the international oil market, but it also has the natural gas reserves. It owns more than $4/5^{th}$ of global crude oil reserve and more than 48 percent of global natural reserve.In future even if there is a shift from crude oil to natural gas, OPEC is likely to continue playing a significant role in world trade.

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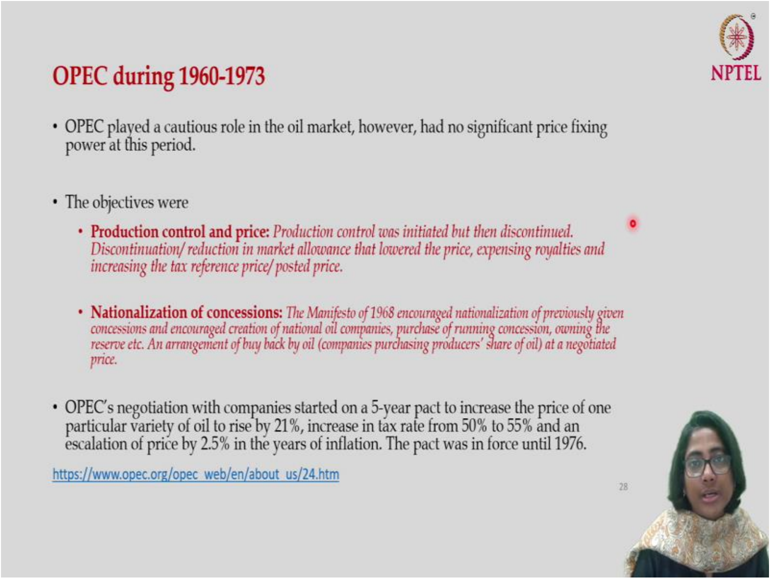

Let us now come to the first decade of operation of OPEC. As we have said that there was not much price fixing power with the OPEC member countries, they focused on two short term targets that they wanted to achieve. Price stabilization is always one very important thing that OPEC wanted to achieve. Now, whether you have the power to fix the price or whether you go in a roundabout way, do some economic corrections to stabilize the price.

In the initial phase, as I said OPEC did not have the power to fix the price. All they did, they went through some economic logic to moderate or alter the supply and to alter the concession and therefore to change the price regime. They had two most important objectives that they had to achieve; one was the production control and price and the second was nationalization of concession. If you look at the production control, the OPEC countries together realized that at the heart of this reduction in price or depressed price, there is the high supply from the countries. Thus production control was initiated in the early phases of OPEC. However, it was not very successful during this decade.

The second thing that they did, in order to recover the price was the discontinuation or reduction in market allowance, that actually lowered the price. You remember last week we had a discussion that market price was usually lower than the posted price because the selling companies wanted to give a number of concessions to the buyer in order to secure the sale of their product.

They also worked on expensing the royalties and increasing the tax reference price, which was the posted price which will be reflected in the higher market price. This is one way that they worked. The second way we have already discussed is nationalization of concession. We discussed the manifesto that the public in 1968 encouraged the nationalization of previously given concessions. So, we saw that, for example, in Iran the concession was given and this foreign company was operating in the inner nation, where the nation did not have sovereign power or ownership of the natural reserves that it had. OPEC encouraged to do away with this situation.

One more important thing that they did, they made an arrangement to buy back the oil. What was the buyback? Although the drive was to own the natural reserve, when the oil was produced these countries did not have the infrastructure for refinement and distribution of oil. For the technological know-how they had to rely on these foreign companies.

Then what did they do? They negotiated with the foreign companies to purchase the producer's share of oil that was at a lower price as compared to the market price. During the first phase through different negotiations, OPEC was successful to come up with some long term pacts with these companies. Thus they were able to raise the price of some very fine quality oil, it's called the Saudi light (also known as Saudi Light Crude Oil), by 21 percent, they increased the tax from 50 to 55 percent and there was an escalation of price. They agreed that there will be an escalation of price by 2.5 percent in the years when it faces the inflation.

However this pact was in practice only till 1976, then it was done away with. Now one very crucial feature that you can observe here. Earlier when we were discussing in terms of the Standard Oil Company, we were talking about the rise of the 7 sisters, the cartel;even if I don't call it a cartel, the understanding was between a few companies. The group was formed by a few companies, but now if you look at the OPEC, this is the intergovernmental body.

The national governments are coming into the picture in order to determine the fate of the oil market. It's no longer the single companies who are coming together and agreeing to do something. This is a very different idea of cartel or coming to an agreement to have some monopoly power in the market. This is a strong deviation from the pre-OPEC era to the post-OPEC era.

One more important thing;the website that is given here is the website of OPEC. It's interesting to go through the website for a lot of information. I would urge you to go through other documents that are available on the website, to understand what is the critique with respect to formation as well as the functioning of OPEC?

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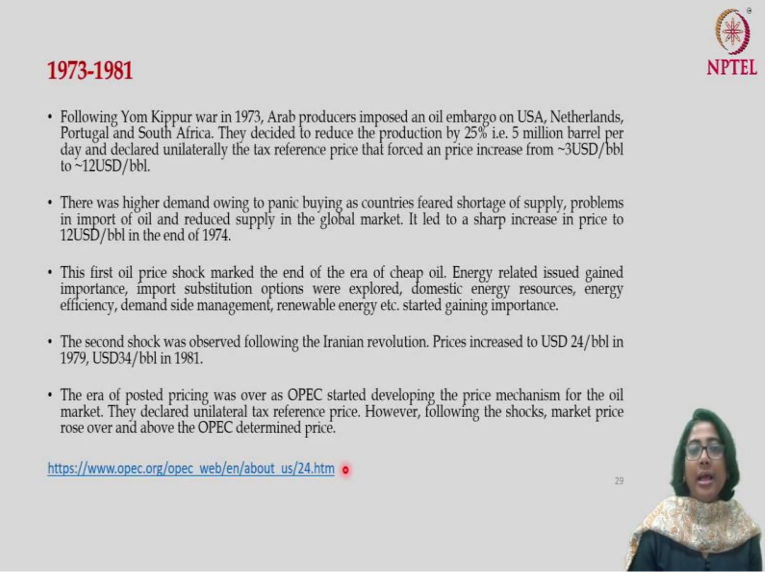

Next we come to the period of 1973 to 1981; this was a very crucial period not only for the history of OPEC and oil, the international oil market, but also this was a rupture point in the history of energy. It determined the course of a lot of things related to economic, political, energy etc. In the initial lectures we talked about how energy became a scarce resource and what was the point at which it was realized that energy is not available in abundance. This is that period of time.

There was the Yom Kippur war where Arab countries and Israel were engaged. Certain developed western nations, the US, Netherlands along with Portugal and South Africa supported Israel in the world. As a result, the Arab countries imposed an embargo on the supply of oil to these countries , that is the US, Netherlands, Portugal and South Africa. They said they are going to reduce the supply of oil to these countries significantly and they also decided to reduce their production by 25 percent.

The production of 5 million barrels per day was reduced. Thus at this point of time, there was a huge reduction in the supply of oil,following the war. At the same time they also declared unilaterally, the tax reference price that was forced and price increased during this period from 3 USD per barrel to 12 USD per barrel. This is not the shock, but this is only the fixation of the tax reference period.

Now, the moment OPEC sets the embargo and declares that there is going to be a supply cut, the demand increased as a shock. A lot of demand came in the form of panic buying as the countries feared that, in future there is going to be a huge shortage of supply and there could be problems with imported oil. This is the point when countries are dependent on oil.

Everybody got scared and wanted to buy some stock for it. In this situation there was a decline in supply to a great extent, there is a sudden increase in demand and as a result the price shot up. So, the price shot up to 12 USD per barrel towards the end of 1974; which was three USD per barrel in 1973. There was a sharp increase and this was the first time the world experienced this kind of an increase in the oil price.

This is the period when the world realized that the era of cheap oil is over and several other energy related issues gained importance. For example, import substitution was explored, how can the domestic resources, domestically available energy be utilized in a better manner?

People started talking about energy efficiency policies. The discussion was about import substitution; the discussion on demand side management came into the force and also that the nation started talking about the possibility of using renewable energy.

This oil price shock, this again is a recap of what we have done in our previous lecture. So, this is a deciding era of energy economics and energy policy in a sense, but this is something unprecedented to the world. It forced the world to think in a very different line, how do you actually move away from oil and think about other things as well.

There was another shock in this period of time. It was due to Iranian revolution and not really from any geopolitical turmoil but from Iran’s international revolution and oil. Following the second thing, Iran at that point of time reduced their production; not only Iran but certain other Middle Eastern countries also engaged in disputes and there was a decline in the supply.

Again, there was panic buying. To declining supply, increasing demand, as a result there was a second shot up in price. Price towards the end of 1979, hit the mark of 24 US dollar per barrel which was very high. You can imagine that it was 3 US dollar per barrel in 1973 within a period of 5-6 years it became 24 US dollar per barrel. It increased further and in 1981, the price was 34 dollar per barrel.

The increase in price of oil, from 1973 to 1981 was from 3 US dollar per barrel to 34 US dollar per barrel. This was something unprecedented, this had never happened in the world. There is one more important thing that happened in this period of time, through all these things that was happening in the post 1970s, OPEC could show that it had a power to set the price of the oil. So, the decision of OPEC to supply or not to supply oil can influence the market price.

This is the period when OPEC gained the power to influence the market price. This was also the end of the era of the posted price that we discussed. Here OPEC sets up the new body to decide how they can manage the price in the world market and thus they started setting the price in the world market. They also declared the unilateral tax reference price. However, following the shocks, the market price rose over and above what OPEC determined as to be the market price. Thus they started having some control over the price, but this kind of situation overshot the price over and above what was anticipated by OPEC.

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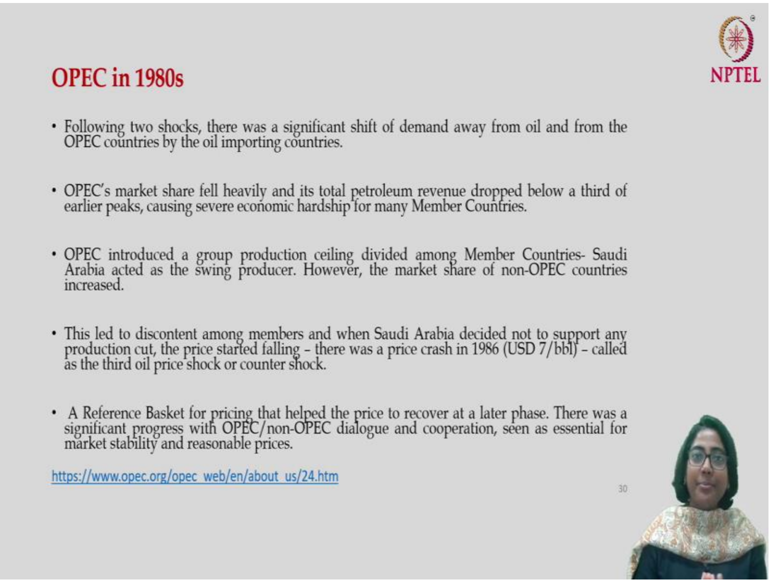

Then we come to an interesting phase of the 1980s. This is the period in the previous decade when the world experienced two very important oil price shocks and OPEC started having the power to decide the market price in the international market. OPEC can manoeuvre over the supply side, however it doesn't have much control over the demand side per se.

Due to the two oil shocks, there was a significant shift because of the national policies, as the people were scared of what will happen if the import is stopped. There was a significant shift away from the oil as a source of energy and people started exploring other sources. The other thing is that the world also realized that OPEC has significant market power. Therefore, if you rely only on OPEC for your import then geopolitically and energy security wise you are extremely vulnerable.what was

We see that there is a lack of demand for oil in the 1980s, as compared to the previous decade and there was a shift from the OPEC countries to other oil importing countries. Essentially in this period, the early 1980s, OPEC realized that its market share was falling heavily and the total petroleum revenue dropped below one third of its earlier peaks. The revenue suffered like anything and this caused severe economic hardship in many of the member countries; This is because the economies of most of the member countries of OPEC started revolving around this business of oil. Thus, the moment you suffer from a lack of revenue from this oil the whole economy suffers.

This was a very crucial juncture at which OPEC was standing and they had to really do something. So, what did OPEC do? OPEC decided to introduce a group production ceiling divided among the member countries. The member countries would have quotas and there will be a group production ceiling. As we have already discussed, Saudi Arabia is one of the big players in OPEC at that point of time, they chose to act as the swing producer. So, their production behaviour will have a great impact on the production behaviour of the OPEC countries and it will always have the power to influence the price. However despite all these efforts the market share of non-OPEC countries started increasing at this point of time.

The OPEC countries had a severe discontent with the whole thing because they are not able to produce what they wanted to produce. There is a quota imposed on them and at the same time they are not being able to gain the market share. This kind of discontent forced some of the member countries to act in a different manner, to deviate from this ceiling divided among the members. The first one was Saudi Arabia and they decided not to support any production cut. They said we are going on with our production; anyway the price is falling, in that case if we reduce our production there is a huge revenue loss.

But as Saudi Arabia was the swing member it decided the course of price and production. The moment Saudi Arabia deviated and started increasing its production, there was a sharp decline in price. There was a huge oversupply in the market, so there was a sharp fall in price. If you remember in 1981, the price of oil rose up to 34 US dollar per barrel. In 1986 in the five year period of time it dropped to 7 dollar US dollar per barrel. This was called the third oil price shock in a negative manner or this was a sort of a counter shock.

We see that, although the price is falling, there is a huge fluctuation in oil price. This kind of price fluctuation is not good for the health of any market. What else did OPEC do? A reference basket for pricing was set up by OPEC at this point of time and this somewhat helped to recover the price at the later phase of 1980s.

There was one important thing; as the market share of non-OPEC countries were increasing, it was important that OPEC started having a dialogue with these people. There was significant progress with OPEC and non-OPEC country dialogue and cooperation and this was perceived to be an essential element for market stability and reasonable prices.

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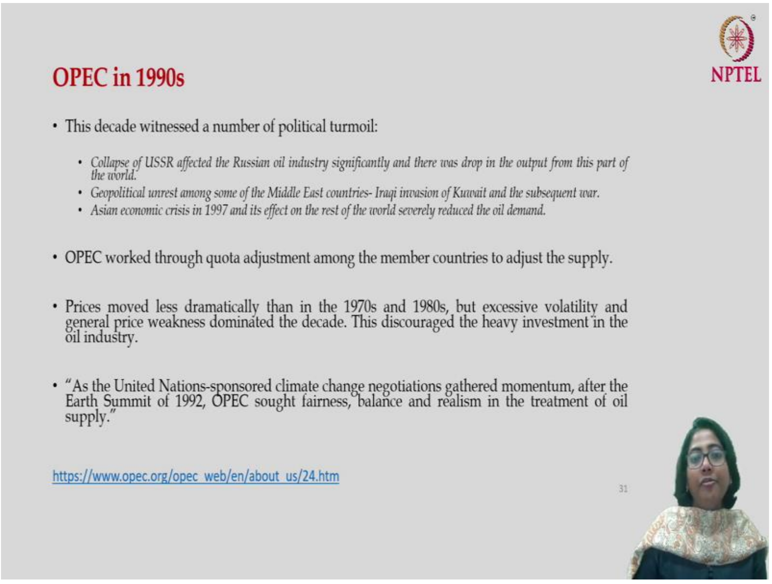

Finally, we are not going to see what happened after the 1980s, in the 1990s. But before we directly go to what OPEC did, we will have a quick look at the 1990s; which is one of the very important deciding eras in world history. The moment we say 1990s, the first thing that probably comes to our mind is the process of liberalization. So, that characterizes the economic process, there was a lot of political turmoil that was going on, the collapse of the USSR was witnessed in the 1990s and Russia was producing a lot of oil.

As the USSR declined, for the first 5 years at least, there was a sharp decline in the production or in some parts the production stopped in Russia. So, suddenly there was a sharp fall in the supply of oil in the world. Now that OPEC has gained the market power as a big supplier having a big share of production, USSR was an important player but not as important as the OPEC country.

There was geopolitical unrest in the Middle East countries as well, Iraq invaded Kuwait and there were subsequent wars. A lot of political turmoil and upheaval was going on in the Middle East countries as well and finally strikes the Asian economic crisis in 1997. It had an impact on the rest of the world which reduced the demand. In the 1990s although liberalization raised the hope that the demand for oil will improve as there will be more activities in the countries. Finally in the early years of 1997 at least till the mid or the entire 1990s; I would say experienced a fall in the supply as well as a fall in the demand. So this is the period of a depression economy in the later part of the 1990s. How did OPEC work and as usual this had an impact on the price. How did OPEC decide to work on this? OPEC worked through the quota adjustment among the member countries and they tried to adjust the supply to compensate for the fall in demand.

Price moved, there was price volatility in the 1990s, but it was not as dramatic as the 1970s and 1980s. There were not many shocks that had been observed at that period of time. However, as there was a price volatility, the price remained low. This discouraged the investment in the oil sector especially by the non-OPEC countries, who were relatively smaller players and had to recover their costs.

According to some of the experts, this is kind of a very subtle phenomena, being uninterested in investment, this continued afterwards. Probably the oil industry could never recover from this economic shock that it experienced in the 1990s.

The last point that I have taken from the OPECs website directly. It says that as the United Nations sponsored climate change negotiations gathered momentum, after the Earth's Summit of 1992; OPEC sought fairness, balance and realism in the treatment of oil supply.

At this period of time, OPEC realizes that it cannot only act as a protector of the interest of the Oil Petroleum Exporting Countries especially in the Middle East; there is another lobby which is coming up, trying to talk about climate change mitigation. If you talk about climate change mitigation, you also have to talk about how you can reduce the use of oil. Thus, the position of OPEC in the global scenario had to be reoriented a little bit.

If you go to the OPEC website, interestingly you see that whenever you are talking about the post 90s, they also take into consideration how they can be a player in environmental damage control, in climate change mitigation etc. However, the guidelines are not very clearly defined, but these words started appearing on the website of OPEC.

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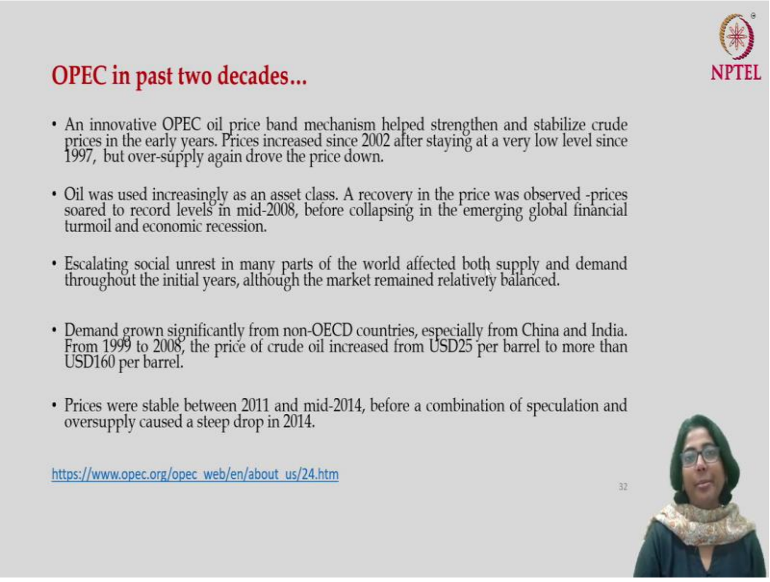

We are going to stop after having a very brief and quick discussion on what happened in the last two decades. There was no significant price shock. We say that there are ups and downs in the prices 2014, so observed one, there were some sort of era where there was price stabilization and so on.

In a nutshell if you want to follow it, the best way is probably to follow the newspapers because there are so many things, small things, big things that have happened during the past two decades. It will take a very long period of time to go to a detailed discussion.

What happened in a nutshell? Finally, we are going to see very briefly what happened in the past two decades. A lot of things happened, although they were not oil price shocks as in 1973 or 1979; but there were fluctuations in price to great extent during this period of time as well. We are going to have a small discussion on that, but if you are really interested in the oil pricing and the behaviour of OPEC, it's best to follow their website. It’s also interesting to follow the regular news about what is going on in the field. For example, in recent years there is a very high concern from the OPEC member countries, that the share of export of the OPEC countries has declined over the past couple of years to great extent and how that can be recovered.

Anyway if you look at the past two decades, from 2000 onward, OPEC really worked in the front of price fixing. The era of posted price was gone. They initiated an innovative scheme which was the band mechanism. That helped the strengthening and stabilizing of the crude oil price in the early years of the 2000 and the impact was immediately seen. Since 2002, the price started rising after remaining very low during the post economic recession period that is post 1997. After 1997 the first true increase was observed in 2002. However, the oversupply continued. This over supply remained a perennial problem in the international oil market and as the oversupply continued it again drove the price down.

Oil was used increasingly as an asset class. As a result the demand increased and the recovery of price was observed after a couple of years. The price soared to a record level in mid 2008. It was during those years that the record peak was achieved by the crude oil price. However, it was followed by a sharp collapse in the oil price in 2014 onwards following the global recession and financial crisis.

Not only the recession and financial crisis, there was also an escalating social unrest in many parts of the world that affected the supply and demand throughout the initial years of the past two decades. Although it would be said that the world market in terms of supply and demand and price, remained relatively stable as compared to what was observed in the previous decades.

There was an important and interesting thing that happened on the demand front. A lot of demand for oil started coming from the developing world, especially from China and India and the share of demand from the OECD countries started declining especially from 2000 to 2010. We will see that the demand for oil grew extensively from India and China so this gave a boost. This kind of demand increases the price of oil as well. That was one of the impetus that increased the price of oil at that period of time.

From 1990 to 2008, the price of crude oil was increased from 25 US dollar per barrel to more than 160 US dollar per barrel. Two reasons are usually identified; one was the supply cut from the Saudi and the other is the growing demand from India, China and some of the other developing countries. But this increasing trend continued only up to 2014 and after 2014 there was again a sharp fall in the price. So, Why was there a sharp fall? It was said that in the developing countries, there was a boom and growing trajectory in the early years. The kind of demand for oil that comes in the early years of development, it has to die down a little bit in the coming years and that is exactly what happened with respect to the demand for oil that was coming from India and China. So, we saw that the prices were stable between 2011 and mid-2014; however, there was a huge or sharp decline in price in 2014. After that the price again recovered and if you look at the very recent trend then there is a declining trend of price as well.

If we want to summarize our discussion of the OPEC behaviour, we can see that OPEC marks a transition from the agreements between some private oil companies to an agreement between the nation states. This is a much stronger agreement to have a monopoly power in the world oil market for a very long period of time. Not only with a decisive power to supply, but also with the decisive power to sort of determine the price.

If you do simple internet search you will see how the price of oil moved together with the supply decision of Saudi Arabia. Therefore, it’s often said that the supply of oil in the international market depends on how much production decisions Saudi Arabia takes. Even within the OPEC there are dominant players. If you are interested you can also explore the oligopolistic market structure where there is a monopoly power with a group of people or group of nations and how they are delegating this power among the member nations, this is one thing that we observed.

We also observed that after OPEC comes into the picture and exerts its monopoly power, there was a sharp increase in the price of oil. Although there are fluctuations, the supply glut often depressed the price, wherever there was an increase in price it came mainly as a result of distribution of quota fixing, the price ceiling by OPEC countries and also through increase in demand in certain parts of the world.

Studying OPEC behaviour is in itself one huge study area. If you get interested it’s very interesting to follow what is happening in OPEC and how the prices are moving. It gives you a lot of research opportunities as well. A lot of people are working in the time series data to work on the data in the world oil market. This is where we are going to end this lecture. In the next lecture we will explore some interesting topics which are revolving around Energy Economics and Policy.

Thank you.