Jim: Good afternoon, everyone. I'm sorry that we're a little late starting, but we've been waiting for some enthusiastic sessions here at the Summer Institute to break so that participants could come and join us.

I'm Jim Poterba, and on behalf of the NBER, I'd like to welcome all of you to the Summer Institute and to this year's Martin Feldstein Lecture, which will be delivered by Gita Gopinath.

Before I introduce Gita, I do wanna say just a little bit about the Feldstein Lecture, and I wanna welcome Kate Feldstein and Clementine and Katie Ray, Marty's two granddaughters who are joining us this afternoon and send out virtually, greetings to the rest of the Feldstein clan that was not able to be here.

You know, it's been now 14 years since Marty Feldstein stepped down as president of the NBER. And I know there are some people here who were not part of the NBER Summer Institute in the Marty era. So I just wanna make clear why we've chosen to inaugurate the Feldstein Lecture in 2009, and why it remains such a central part of the Summer Institute.

Marty was the president of the NBER from 1977 until 2008, with a few years of Washington services, the CEA chair taken out in the early 1980s. And he really transformed the organization. When he became NBER president, there were about 30 research staff, called research associates at the time. Within two or three years, he had created the concept of the network NBER, he'd affiliated more researchers at more universities, and he had launched the trajectory which continues to this day. When Marty stepped down in 2008, there were nearly 1000 NBER-affiliated researchers. Today there are over 1700.

The reason, however, when in 2009, the NBER board was tasked with "What should we do to honor Marty and to thank him for his contributions to the economics community in the NBER," the reason that the lecturer at the Summer Institute seemed like it was the perfect thing was because Marty invented the Summer Institute.

Marty was a fantastic economist. He was an early recognizer of team economic activity, that economic research was a team sport, both for researchers working with their teams of assistants, but also that there was a really important value to the interaction within the professional community. And one of the things he created was the idea that there would be meetings of small groups, not the AEA meeting where everybody was getting together, but rather, a meeting of labor economists, a meeting of international finance economists, a meeting of trade

economists, and that it would be a high-octane gathering of these groups to be able to exchange ideas and talk about their latest research.

And that was the way the Summer Institute started in 1978. It convened two groups. And those groups spent more than a week together. And they were small groups, but they were really intense opportunities for interaction. And I think Marty's original vision was that the Summer Institute would be, sort of, a summer camp for economists. That they would come and they would spend long periods of time doing this.

Now, the complexities and the demands of modern life have made the notion of coming and spending the summer at the Summer Institute very difficult for most people. But the core idea of taking this time outside the academic year, bringing people together, and allowing them to interact, to share their latest research, to build new ties, to start collaborations, to work together on joint projects, endures. And it's become a really important part of the annual cycle within the economics profession, not just in North America, but more generally.

COVID has not been able to deter the activity and demand for the Summer Institute. At the last pre-COVID meeting, which was 2019, just after Marty's untimely passing, we had about 2,800 participants at the Summer Institute. This year, we have 2,400 participants at the in-person Summer Institute. And of course, we've learned how to do Zoom. And we have another 2,000 people who are registered to participate on Zoom. So it remains and has become even a more important part of the broader economics community.

I do wanna pause at this moment and thank Rob Shannon and Carl Beck from the NBER who have played an absolutely critical role throughout the year in planning for this and all of that. Rob is actually here. A round of applause for Rob.

I always find it hard to believe, but planning for next year's Summer Institute begins on the Monday after the Summer Institute finishes this year. And Rob actually manages to drive that forward. Rob, thank you so much for managing to do this. And I can assure you all, although you have noticed, I'm sure, occasional hiccups in how the hybrid meeting technology works, running a hybrid meeting is much more than twice as difficult as running either an in-person meeting or a pure Zoom meeting. And Rob and the conference team, Bo and Nick who are here with us, as well as the many other supporters. Thank you all for the great job that you've been doing. Really, really appreciate it.

So this brings us now to, you know, what is the Feldstein Lecture? What were we trying to do? Well, Marty was not just a fabulous economist, he was someone who had deep interaction in the policy space. He really saw economics as a tool which could make the world a better place. And he wanted to be engaged. So the board of directors said, "We wanna find people who can, you know, talk about the role of economics as a tool for interacting and showing how we can improve policy."

So we could not have imagined a better-positioned person to deliver this year's Feldstein Lecture than my good friend, Gita Gopinath of Harvard University, and now the first Managing Director at the IMF. Gita has a long connection to the NBER, having joined in the early part of this century, and having been a research associate, but then having been the co-director of the international finance and macro program, following the big shoes that Jeff Frankel left after having founded that program, more than 20 years earlier. And Gita then, in 2019, traded the IFM initials here at the NBER for IMF instead and headed to Washington as the chief economist and the director of research for the fund.

Her timing, at least if you wanted an exciting time to be an economist in the policy sphere could not have been better since the pandemic broke over the bow of the world economy shortly thereafter, triggering a host of challenging economic questions, many of which really stretched the capacity of what we knew previously in the research space.

Gita led the research department, leading from the front because, of course, I know many of you are familiar with and some of you are collaborators on the remarkable range of research that Gita has worked on, generating more than, I think, 11,000 Google Scholar sites, when I checked earlier this week, on everything from pass-through of exchange rates into prices to understanding emerging markets to understanding international capital flows, and all that they bring along with them.

So Gita has led from the front in terms of the critical aspects of research where the IMF is most positioned. She did such a wonderful job leading the economics department and the research division, that earlier this year, she was tapped to become the first managing director, a role which gives her a much greater, you know, portfolio in terms of actually making and implementing policy decisions and putting the research that she and her colleagues in the research department were doing into practice in thinking about that.

Gita, as you all know, has been playing a key role as an expository of the IMF forecasts, the concerns the IMF has around the global economy as we navigate

this really challenging time and try to understand how the combination of the war in Ukraine, the late stage of the COVID pandemic, and other challenges like inflation all come together.

So I am thrilled that Gita having just returned from the Bali G20 Summit less than 36 hours ago, getting back to North America, has come and joined us to talk tonight about managing a turn in the global financial cycle. And Gita, we are just thrilled that you can be with us. So thank you so much.

Gita: Thank you so much. Thanks, Jim, for the very kind introduction.

And it's a real honor for me to give this lecture, Kate. Marty was an exceptional colleague and a dear friend. I mean, I would describe him as an incredibly helpful colleague. I remember when I came to Harvard in 2005, I was trying to get access to data from the Bureau of Labor Statistics. And that required Harvard to counter-sign a contract with the BLS. They were giving me an impossibly hard time to do it. And I spoke to Marty and Marty said, "Why don't you just do this with the NBER?" And it took 24 hours and I was all set. So you know, that was an example.

The other thing that I find incredibly memorable about Marty is that he was so respected worldwide. I went as part of the Neemrana group to China when I was in India. And people really admired him and respected him from all these different countries. So the kind of impact he had, obviously, had a big influence and, you know, one of the people I think of as I've moved from academia to the policy space.

Okay. In terms of the lecture today, I am going to talk about, the topic is related to capital flows. And I'm sure all of you know this, but in case you don't, I actually wanna, probably the most cited paper of Marty's is the Feldstein-Horioka puzzle, which basically was looking at the relationship between savings and investment in a country. So it was an empirical relation. And he just noted that there was a very high correlation between savings rates and investment rates in countries.

And, you know, under the benchmark that you would think that, well, if this was a perfectly integrated world, in terms of capital markets, we really shouldn't see that high a correlation between savings and investment in a country. That's part of a very big body of work on trying to understand different explanations for it, including some on home bias, and so on. But I remembered this paper as I was thinking about what lecture to give today.

What I'm going to go into is a little more current, which is a question that many policymakers in emerging and developing economies are grappling with. So actually, the reason I'm giving you this lecture is because it kind of gives you a flavor of how questions arise when you're at the IMF and, you know, topics come up. And then you see a disconnect between what the policy world wants and what the academic world has put together. And we go and dig in and do some additional research. Once you do the research, you have to get the board at the IMF to sign on on a new direction in which we think policy should be going. And then you go to the operationalization phase, which is, when you deal with 190-member countries, you have a new framework that you use to deal with it.

You know, at this current juncture, this question is very important. I put this slide up. This is called The Turn in the Global Financial Cycle, which is basically saying that, after about two years, when central bankers around the world kept interest rates extremely low, and financial conditions were really sanguine, we are beginning to see global financial conditions tighten.

Okay. So we're now at a point in time where after two years of financial conditions being very loose because central banks kept interest rates extremely low, that now because of inflation in many, many countries, we have kind of a global tightening cycle. So about 75% of the central banks that we track have interest rates that are going up. They're raising interest rates.

So you can see that right at the end of this graph, this thing moving up, which is basically that you have, if you look at, for instance, the IMF global and the IMF emerging markets, excluding China, it's turning up. So we have a worsening in financial or a tightening in financial conditions. The right graph also tells you something about where we are right now, which is this is the fraction of emerging markets whose yields exceed 10%. This is the foreign currency bond yield exceeds 10%. And those are coming up to around 30% of these countries. Right? And alongside we have what classically happens when you have a global financial cycle is you have a strengthening dollar.

And why is all of this particularly concerning is because we've had a period before now when you've had an increase in external debt of these emerging and developing economies, both in foreign currency and in local currency debt. Now, you can see that there was some learning that happened, which is over the last decade, everybody realized that having too much of a debt in foreign currency can be a problem. So you wanna switch to local currency debt. The local currency debt has also gone up.

Okay. So why do emerging and developing countries worry about a period of this kind, which is that we know that interest rates are going up, right? So in our models, that would be like an R-star that's going up. But usually, along with R-star going up, or interest rates going up, you have phenomena called Taper Tantrums and Sudden Stops. Let me just explain to you what those are.

Taper tantrums are basically periods when... So this is 2013, taper tantrum, at the time when the Fed was beginning to talk about tightening policy. This was Ben. Ben Bernanke gave a speech where he said something about the fact that we may start quantitative tightening sooner, which means interest rates may go up sooner, but no action was actually taken. But just the expectation that there would be tightening led to increase in UIP spreads. Uncovered Interest Parity spreads, which is the excess return on local currency bonds issued by emerging developing economies relative to Dollar interest rates. So that excess return goes up by around 200 basis points, which is quite a bit in this period.

So that's called a taper tantrum. This happens quite a bit for emerging and developing economies. Any kind of communication coming up the major central banks leads their borrowing costs to move quite significantly, even if it's only for a brief period of time, it tends to move, and that creates a need for intervention by their authorities.

The right graph is what's called sudden stops, which is much more serious than the tantrum, right? The sudden stop is supposed to be an episode where you kind of, it's a nonlinear phenomenon, and it's like you hit a big borrowing constraint, and you get a much more nonlinear response, which then leads into having a very big growth impact. And so you can see that those were the episodes of sudden stops, the global financial crisis shows up as one. The taper tantrum is not a sudden stop because you didn't really have a big growth impact.

So these are the kinds of, you know, financial market responses that you get that these countries are dealing with, which a typical advanced economy with the financial markets doesn't even bother about. This is the kind of problems that their markets are deep enough, that one set of investors wanna pull out there's enough of the other ones that come in, and you don't have this kind of sudden stop or taper tantrum.

Okay. So the question that gets posed is are interest rates and flexible exchange rates enough to manage a turn in the global financial cycle? Right? So, you know, if you go to any textbook, by textbook, I mean, an undergraduate textbook in international economics, the typical solution would be, you know, there's nothing you have to do. You have flexible exchange rates, you move

your policy rates around if you need to. And that should be enough. And that's just the right thing to do to manage a global financial cycle.

In fact, again, this comes from Ben, that at the time when we had the opposite phenomenon, which was right after the GFC when the Fed was doing a whole lot of quantitative easing. And at that time, there was capital that was going into emerging and developing economies flowing in, these countries complained and they said, you know, "This is the problem for us. All this capital flow that's coming in, because you keeping all levels of interest rates low, is leading to overheating in our economies. Right? And that's a huge problem for us." And Ben said, "Well, the reason it's a problem for you is because you don't let your exchange rates appreciate. If you'd let your exchange rates appreciate, you'd be just fine. And that would give you the insulation that you need."

So that's what my talk is going to be about. And three years back, when I went to the fund, these, you know, 160member countries or so, basically said, you know, "This is not satisfying, that you tell us that flexible exchange rates does the job in response to volatile capital flows." And we need to do more. And the reason we need to understand better is because in practice, countries do many other things. So if you look at most of our members, in addition to using the monetary policy rate, they use FX intervention, they use capital controls, they use domestic macroprudential policies. They use all of this. All was tough, as the IMF to be able to have a conversation to discuss these exact policies with them was that there was no framework. I mean, there is no welfare maximizing framework, the ones that we would like to use which integrates these multiple tools in multiple frictions. Right? So these were tough conversations because, you know, "We're doing X because we have Y, we're using these two instruments." It was not clear, like, what is the friction you're addressing? What's the externality? What the problem is?

So three years ago, we basically, at the IMF, we went into this... Okay, I don't get to touch anything, yeah? I wanna keep talking, hopefully, they're clear. All right.

So we then said, "Okay, we need to do the research because actually there's nothing I can turn to, a set of papers and say, "Well, hey, we've done this, we know what the answer is to using these tools." And so there was a hole in that space in terms of what we needed to build to understand how to advise countries on using these tools, and if and when they should do it. Right?

So there are many papers that got done over the last few years. I'm only flagging the two in which I was involved, which is what I'm gonna base the rest

of my presentation on. But there's been much other work. And this is joint work with my co-authors at the IMF, Suman Basu, Emine Boz, Filiz Unsal, Francisco Roch. So if you wanna look at the papers underlying it, those will be the two papers to go and look at.

Okay, so that's what we did. So, again, three years ago, we started out on this. And we said, "Okay, we need... My predecessor, who was the first deputy managing director, David Lipton gave it the name Integrated Policy Framework, and that stuck. So that's what it's called, even though sometimes people don't understand what that means when you say that, but that's the language. That's the terminology.

So the way we started it is the way we would do this if we were thinking of solving this problem, which is, we would start by saying, "Okay, what are the frictions and the externalities?" Of course, we kind of put together a model to understand it. And then I'm going to apply that model in the specific context here, which is about managing the global financial cycle now. And what would optimal policy responses be?

Actually, I should ask you, Jim, until when do I go?

Jim: I would say like half an hour. [inaudible 00:22:08]

Gita: Yeah. Okay. Very good.

Okay. So we have a good, deep literature that looks at all the kinds of frictions you can encounter in the open economy context. The first friction, of course, is the fact is one of price stickiness. This was what underpinned the classic Mundell-Fleming model. I mean, that was the main friction, which basically had that firms set prices in advance. And those prices did not respond immediately to any new shocks. And because of that, you could get fluctuations in output. Of course, in the open economy context, it's not enough to say that prices are sticky, you have to also say which currency the price is sticking in. So there was a whole body of work that looked at different possible forms of price stickiness.

I pushed the dominant currency pricing framework where prices are set mainly in a couple of currencies, and the dollar is dominant in there. That's been a well-known fact. It's not unknown that the dollar plays a huge role in global trade. But in the last decade, 10 years, the research has basically showed that that actually means something. It's not just that the price is quoted in dollars. But everything that that implies in terms of the real effects on imports and exports

on farm profitability and so on is what you see. There's been a big body of work that shows how sticky.

Anyway, once you have price stickiness, then you have one externality, which is the aggregate demand externality. And you know, I give this to Emanuel and Yvonne for making this super clear and making front and center in the, you know, beautiful econometrical paper. But it's the basic aggregate demand externalities that is just the fact that consumers don't internalize the effect of their decisions on aggregate demand. And this can be a problem if prices are off. So if prices are too high, and you are consuming too l ittle, you're not internalizing the fact then that that can generate lower output and higher unemployment.

So that's the aggregate demand externality. Now, in the open economy context is also something called the terms of trade externality, which is basically the fact that when firms have pricing power in international markets, they take into account the fact that they have pricing power and that their own demand curve is downward sloping, but they don't take into account the fact that the whole country's demand curve is also downward sloping. Right? And because of that, this gives an incentive for the planner. And we actually want to manipulate the terms of trade. Right?

You know, Galí, Monacelli is one presentation of this. But this is there all over the literature once you're doing any kind of price stickiness, these terms of trade externality shows up. So one of the things that we do when you're working on these modules, you're working at the IMF, is you're also talking to the authorities about what they think as being meaningful frictions. And the terms of trade externality is something they just don't. It is not something that they... Because in terms of trade externality, in this context we would say that your country is actually exporting too much. You want to actually reduce exports so that you can move the relative price of your goods in international markets up, and that would be a positive terms of trade effect. They just don't get it. That's not something they care about.

So you will see that when we build the model, we mute that particular channel because we don't want a prescription that's based on a terms of trade externality.

Okay. The next friction, what they worry about is what we call shallow markets, which is that there's imperfect substitutability of assets. By the way, this is kind of a parallel literature that came up at the same time that Mandel and Fleming were focused on price stickiness. There was Puri who was focused, not on the goods market, but on the acid market, and about this fact of

imperfect substitutability across different assets. So specifically, imperfect substitutability between local currency bonds and foreign currency bonds, right? That, for some reason, was a less explored literature for a while, and while yes, there was work done on it, but you [inaudible 00:26:50] credit for resuscitating that line work. And then there are more papers that have come up.

So what kind of an externality does that generate? It's something, what we call the financial terms of trade externality, which is basically that because these two assets, your, you know, suppose is Mexico, and Mexico is issuing personal bonds, you know, and you have financial intermediaries who are then lending to you, they charge you a premium because of the currency risk for holding those personal bonds, right? Now, as an individual in Mexico, you're not internalizing the effect of your issuance on that premium. But for the country as a whole, every time you're issuing new personal bonds, you are affecting that premium. And so for the country as a whole, that obviously matters.

So that's an externality again, that comes in which a planner would care about. And they would care about why, because it's not always a problem. It's a problem when these financial intermediaries are international, right? Because that's lost resources from your country to the international financial intermediary. If all it was was that it was going from one domestic agent to another domestic agent, the planner wouldn't care about it. But in this case, they do. If it goes out externally.

The other externality, our external debt limits and sudden stops, which is what I was showing you on the slide before, which is again, the fact that when you borrow, you are subject to a borrowing constraint, and the amount that you can borrow is tied to a collateral. And the value of that collateral can move around when your exchange rate moves around. And therefore, again, as a household, when you're making a decision about how much to consume, you're not concerned about the effect on the nominal exchange rate, and so on. And again, that's an externality that matters for the country, but you just don't individually internalize that.

Okay. So, in the literature, which would be the standard way to do it in the academic literature, would be to analyze one friction, one externality at a time, right? Most of the papers, basically, look at one of these frictions at a time. There are exceptions. And those are some of the papers which look at a couple of those, which is sticky prices and external debt limits. But so the challenge here, when we set up to do this work was to say, "How can we build an analytical framework to actually incorporate these different externalities that a

policy world will care about? And what would that give us in terms of predictions, including for now, which is in terms of managing the turn in the global financial cycle?

So let me just walk you through the model very, very quickly. So the setup that we have in the two papers that I listed before is richer than what I'm going to show you. And this is kind of a bit of a streamlined version. I'm not going to have any role for macro prudential policies. The paper has a housing sector and so on, which gives rise to it. So I'm gonna show you a much more streamlined model just to give you a flavor of how we played with it and, kind of, what the takeaways would be.

Okay, so in terms of the sectors, we have households, we have firms that produce and sell goods that are tradable, we have domestic banks, and we have international financial intermediaries. And the policy tools have policy relatedly, the exchange rate, capital controls, and FX intervention. We set it up as a three-period model because we wanted to look at both ex-ante and ex-post policies. So policies that you would put in place before the shock is realized, and policies that you would put in place once the shock is realized. And so that gives us three periods. And all of the action is in period one because that's when the shock is realized. And period zero and period two are just a single state.

Okay, so the interesting part of the model is the financial flows diagram, is the financial markets. So here's what we have. So we have domestic banks in this emerging market that is borrowing from international financial intermediaries and lending to households. And they borrow in domestic currency. And they lend to the households. There are limits to how much they can do this, which is that it's tied to a collateral constraint, which is that the amount of date that they can issue has to be bounded above by a value of a collateral. And importantly, the value of the collateral is sticky in the domestic currency. So if I re-wrote this in terms of foreign currency terms, by just deflating the exchange rate, you can see that the right-hand side, and again, depending upon what the left-side does, but the right-hand side will fall, which means the amount that you can borrow in foreign currency will decline whenever the exchange rate depreciates.

Now, what are the financial intermediaries? The financial intermediaries who are lending to the domestic banks in domestic currency are funding themselves in world capital markets, they borrow at I star from the world capital markets, and they lend at IT to these domestic banks, but they're subject to capital, you

know, tax on their earnings, and so that's one minus YVT [SP]. And this is just taking into account the exchange rate movement, right?

So under uncovered interest parity, if you had uncovered interest parity, this term, in expectation would be zero, which is that in expectation, what return you make on your domestic currency lending is exactly equal to the cost of your borrowing. But we have this shallow market phenomenon, we allow for the shallow market phenomenon. And that's because of the imperfect substitutability of domestic currency bonds and foreign currency bonds, and that's given by this term over here, which by the way, is a framework of [inaudible 00:33:26] which is basically that this excess return is equal to gamma times the amount of domestic currency bonds those intermediaries have to hold. Okay, so this is gamma times isn't a function is just a parameter gamma times what's in brackets.

Now, there's another kind of financial intermediary that comes in there, which is the SD, which are basically noise traders. Right? So the noise traders are irrational, they come in and out of the market. And they are the ones that generate taper tantrums and outwork. And what FX intervention can do is basically undo those taper tantrums. Okay?

Now, we have to be careful because if we're saying that the central bank can come in and get rid of this friction in the market, there has to be limits to how much you can do this, because we really don't believe that the central bank is going to, you know, intermediate all of the private sector's transactions, right? So we only allow this FX intervention to work when it's dealing with these noise traders. People are coming in. So there are limits to how much they can do it.

Okay. And then we have a cool trick, which is that we want to make this model have the domestic currency bonds and have the foreign currency bonds and have the mismatch in there. So we have that a fraction lambda of these financial intermediaries are owned by households, okay? So what does that mean? So if that lambda goes to one, which means all of these intermediaries are owned by the domestic households, then effectively, all of the debt of this country is foreign currency debt. Right, because what you're doing is that the household is borrowing in local currency terms, but you own these firms that are basically borrowing internationally in foreign currency. As lambda goes to zero, you have no currency mismatch. And you basically are then borrowing entirely in your own currency, so you don't have the currency mismatch problem.

Okay, and then the rest of it is pretty standard on the household side, the consumption of imported goods and home goods. And on the pricing side, not surprisingly, we have dominant currency pricing for exports. In other prices, export prices are sticky in dollars. IPS.

Okay. So, with this, there are the following wedges. The first is the aggregate demand wedge, which is what I said earlier, which comes about what this basically is, is the gap between the marginal rate of substitution between consumption leisure and the moderated transformation, which comes from the production function for the traded goods. This is again comes from Yvonne and Emanuel's very nice work. So there's that. So you can end up in a situation where because prices are too high, you end up with this wedge being positive, which means the economy as a whole is producing too little.

The pecuniary externalities which go through the sudden stops also feed into this waste aggregate demand wedge. You also have the uncovered interest parity wedge, which is the gap in terms of this is the excess return that you are paying on domestic currency bonds and this is the utility loss from it. That margin utility loss from that expanded additional return that you're paying. And like I said, it is a problem only to the extent that you have some of this that's owned by foreign agents, right? So you have actually resources that are being sent out of the economy. If it wasn't the case, this will not be. If Lambos is equal to one, then this is not a wedge that the planner needs to worry about.

We ignore the terms of trade manipulation noted for the reason that I talked about previously. And we can do that by basically the planner ignores the impact of his policies on the export price of the good.

Okay, so by showing you that slide, we're basically solving for the Ramsey planner problem. But now let's get into the question I started out with, which is managing the financial cycle. And so I'm gonna put this in form into, kind of, boxes. It kind of helps you see where the results lead us.

So you have a country that can have deep FX markets, and whose debt can be far from the debt limit. Right? So think of Canada. Canada is a country with deep FX markets, its debt is far from the debt limit. It's not a problem. But then you can have countries whose debt may be lower and far from the debt limit, but has shallow FX markets, which is their currencies' bonds are thinly traded.

And then, of course, you can have countries whose debt is near their debt limits. So let's just look at the simplest case, which is what happens if you're in this box, and you're Canada, and you're in the tightening of the global financial

cycle? And for you, so you're facing this, the interest rates are going up, right? But you have deep FX markets and you're far from debt limit.

The flexible price solution would be that you would reduce imports, you would reduce your debt, but otherwise, your consumption of home goods would not change and exports would not change, right? Now, you can mimic that exact policy, if you have sticky prices, you can get the same outcome by letting your currency depreciate. So currency depreciation gives you the exact same effect, you get your inputs to decline, you reduce your foreign debt, you are at full employment in the setup. So this is the box I would say is the textbook box that we have. Which is that if you have FX markets and you're far from the debt limit, then, you know, you can let the exchange rate do its job, you can use the policy rate and you can use exchange rate and you're good.

I did this already. So you have a policy rate in exchange for depreciation. It's basically in this case, my three [inaudible 00:39:38] is literally give the exchange rate. Yu move the exchange rate and policy rate doesn't change.

Now let's look at a country tha has shallow FX markets, it's far from its debt limit, but has shallow FX markets. Now, a lot of countries, like for instance, Indonesia, Malaysia, Thailand, they constantly worry about the situation that they have shallow FX markets. So then what happens, in this case, is you actually end up with, you know, in one of the cases that we show you, for stockiness, what you can see is that, let's look at the shock, which is what we call this the foreign appetite shock, which is S. So these are the noise traders. And so this is like a taper tantrum shock, which is some of those noise traders who are coming in and buying your domestic currency bonds decided they don't wanna do that and they go up. So that's a problem for you. And this is like completely a noise shock. It's not a fundamental shock. And in this particular case, the result that we would arrive at is you actually want to keep your exchange rate and your policy rate unchanged, but rely only on capital flow measures and FX intervention to undo it. Right? And so why is that?

I mean, this is what I mean by a near shock. The external premium that you're paying in this country when you have shallow FX markets is increasing the amount of external debt. And then that shock basically moves this curve around. So at every level of debt, you're either paying a higher rate, you're paying a lower rate, depending upon how these noise traders come in and out.

Okay, so, in this particular case, when you have shallow markets, and in a stock case where you have the symmetric kinds of shocks, then again, capital controls and FX intervention does the job for you and you should not rely on any other

tool. Right? So how does that work? So there are two things as a policymaker that you can do. Well, you can do many things, which is, you look at the right-hand side. So this is the excess return that you're giving your financial intermediaries, right? So when S goes down, that means that the guys with the balance sheet frictions need to hold more of the domestic currency debt and they're demanding a higher premium for holding it.

Now, you can meet that by you could raise the policy rate, you could raise interest rates, or you could give them a subsidy on the... This is the capital control subsidy. You could give them a capital control. So because I'm starting with zero capital controls, in this case, this translates into capital controls subsidy.

The benefit of using the capital subsidy as opposed to using the interest rate is that when you use the interest rate, you're affecting borrowing decisions at home or the consumption decisions at home, and you end up with excess deleveraging. By using the capital control subsidy, you can therefore separate the policy rate that domestic agents face from what you have to give to the financial intermediaries.

An alternative thing you could do is you could do FX intervention, which is basically what you do is you would sell FX, and you would buy the domestic currency bonds. So you would take the opposite side of these noise traders, which is what several of the central banks do.

Okay. So then the question is, why do I need to use both these instruments? I've told you why I don't wanna use the policy rate because it's gonna affect the margins. The question is, why do I need to use both FX intervention and the capital control? And the main reason is that each instrument is costly in the setup. When you use the capital control subsidy, you're losing foreign exchange to the foreigners, and then when you do foreign exchange intervention you're foregoing currency profits. So you use the two together. And when you do that, then you completely get rid of the effect of the shock.

So another way of saying this is that in response to, kind of, non-fundamental shocks that are hitting our economy, you actually don't want to use your policy rate and your exchange rate, but instead, these other instruments are much more targeted and get you the insulation that you need.

Let me see where we are on time. Okay, we have another 10 minutes, that's the time, right?

Then I move on to the case where I look at more what looks like a sudden stop, which is the case when CAPA age goes down, which means that the value of your pledgable collateral is now viewed as being lower. The markets just think that you don't have as much collateral as they thought you did have in the past so they tighten the borrowing constraint. And again, now, it depends upon whether you're a country that... And if you're near the debt limit, it does depend upon whether you have deep FX markets or shallow FX markets, right? Because if you have shallow FX markets, in addition to the sudden stop piece, of course, there's the other piece which is the premium that you're paying on your bonds.

So I'm just gonna make a couple of results on this and just move on. So this is what basically the sudden stop shock looks like. It's basically moving your debt limit to the left.

And so what happens here in the sudden stop shock's case is what do you wanna do? So you have foreign financial intermediaries who now think that your collateral is of less worth, and that leads to a tightening of your ability to borrow, which reduces consumption. In this case, what you want to do is you want to depreciate your currency because by depreciating your currency, you're gonna tilt demand, at least towards your goods for the same level of consumption. The problem with doing that is, of course, that if you have foreign currency borrowing, then that depreciation of your currency is then going to tighten the constraint even more. But if on the other hand, you have your debt is in local currency, then you know, that negative effect is not there, at least by the amount of local currency that you have.

But in the setup, what you end up having is because of the fact that the sudden stops lead to a big drop in consumption, and therefore through that, an effect on the amount of output that you produce [inaudible 00:46:10] what you want to use is you want to use a capital control. So again, in one of Yvonne and Emanuel's papers, they have the case when all of the debt is in foreign currency, that you would use an extended capital control. But of course, if it is in local currency terms, you will use less of that exotic capital control.

And just one last thing, which is a question that many of these policymakers grapple with in the emerging markets, which is how much to regulate the amount of borrowing in different currencies, right? They're very concerned about mismatch. So they're very concerned about their banks having exposure to foreign currency borrowing. And so, in many cases, they're actually

restricted and they say, "You kind of have a mismatch of borrowing in a currency in which your earnings are in."

So, if you look at what happens if you actually do that, and you move a country, which is at a point where it has shallow FX markets, then if you say that, well, you move only towards local currency borrowing, so the domestic banks get out of this intermediation business between foreign currency and domestic currency, on the plus side, you get better hedging, that's for sure, right? Because if you're moving more towards local currency debt, you use your exchange rate to depreciate the exchange rate in bad times, that reduces also, the value of your debt that's owed externally, so that moves in the right direction. But on the other hand, because you're kind of shrinking the intermediation that can be done for your currency bonds in markets, you end up having to pay a higher premium on whatever amount of local currency or borrowing that you were doing.

So again, optimal effects. Mismatch regulation depends on FX market depth. And when you have deep FX markets, then of course you could ban FX mismatches entirely, but when you have shallow FX markets, you may regulate but not want to ban these FX mismatches.

Okay. So, coming to the conclusion, getting back to my question of are interest rates and flexible exchanges enough to manage a turn in the global financial cycle? Again, the textbook is, yes, I will just add a line to it, which said when markets are deep, and you're away from the debt limit, then yes, that will be right. But more generally no, in other cases. And in fact, in some cases, like I showed you for S shocks, other instruments may actually dominate.

Okay. Now, to be clear, we are the IMF. So we are very nervous about telling countries to use capital for measures and FX intervention and so on. So yes, this theory, it gives you insights about what can happen and what instruments you may want to use. But a big part of the work over the last three years has also been about how to use Handle With Care. Right? Which is to be, you know, in the model, the instruments work well, there's no evasion, there's no people behaving as you model them. There is no concern that there will be misuse of instruments. This is a fantastic Ramsey planner who's making these decisions. But obviously, for the members, these are all the concerns that they have, which is that if you say that this tool is good you can use it, then you might have people misusing it all over the place for all the wrong reasons. And some instruments are worse than others.

So the big part of the work over these last couple of years was basically a whole lot of empirical work. You know, these are not very well identified

specifications, but at the same time, as best possible to figure out how these instruments play out in the data, whether they actually provide you with the kind of insulation, whether they actually help you macro stability perspective, and so on. And some instruments that work and some instruments that don't work. And also, you know, the constant refrain, which is that you don't want to use these instruments in lieu of needed changes to your macro policies, right? So the problem is that you're spending too much and the fiscal deficit is too big, then these measures are not what should be using, you should be addressing the fiscal problem in your country.

So, after doing all of that, just in terms of my last slide on the operationalization, which is that...So we did this, I think, was it February? Yeah, February, we had a board decision. So at IMF, we have what's called the IMF institutional view on capital flows, which is what the IMF says are acceptable policies on what countries can use to manage capital flows. This IPF work basically led to one big change in the IMF's institutional view, which was basically that for financial stability reasons, capital controls on inflows may be appropriate to reduce unhedged external debt stocks, right? So basically, you can use preemptive capital flow measures when a country's debt is high, and especially if it's high in foreign currency because, in that world, you're more likely to end up with financial stability problems.

So this was an important kind of marker for the IMF's institutional view on capital flow management. And right now, we are in the operationalizing of this work, the integrated policy framework for countries' surveillance. Of course, there's a lot more work that's done. You know, there's work on quantifying the framework, building data set of metrics that capture these frictions. There's always going to be judgment which is integrating considerations beyond the models,. In fact, you know, the level of institutional development of the country. For instance, if you're a low-income country and you don't have strong institutions, then you really want to communicate on your one policy and one instrument because otherwise you're gonna have a huge problem managing outcomes. So getting into all of those.

But anyway, I'm gonna end with this, but you know, it's been fun working on this because this kind of covered the whole spectrum from a big policy question that many central bank governors and treasuries and so on were thinking about to kind of creating the work that was needed to help these countries getting a change at the IMF board, and now, at the operationalized states. And as FDMD, I get to say that the operationalization state deal with countries on this.

All right. Thank you.

Man: How concerned are you about the emerging world, and the external debt burden in a situation where the dollar really is surging to new highs, decades highs, against the Euro, the Yen, and currencies all over the world? And that probably isn't gonna stop. As a forecaster, that's my view, it won't stop. You're gonna be under a lot of stress as these countries are. So what is the exposure of these countries in terms of the external debt [inaudible 00:54:09] countries if the currency pressures get to be more compared with the great financial crises when they really were devastated when the dollar through the 1980s went to extraordinary highs, and the external debt risk with the markets and the world?

Gita; Now, thank you. This is a question, as you can imagine, we have many hours of meetings on in terms of trying to see, you know, what the scale of the problem is. So right. So managing a ton of the global financial cycle. I was talking about the current situation where after two years of sanguine financial conditions, we have interest rates going up, and pretty rapidly. And at a time, when we have countries that have not fully recovered from the pandemic, and now are getting hit by high energy and food prices and so on. And with debt at record highs, right?

So if you want to ask me about how I see the landscape, I would say that it is still quite heterogeneous, which means that there are commodity exporters who because they're benefiting from this increased run-up in prices, that they seem to be, you know, in relatively better shape. But then there are countries like Sri Lanka, where the commodity importers, they got hit by a loss of tourism revenue for two years, and they're in a much more deeper problem.

So, you know, would I say that we see right now a systemic debt crisis in countries? I would say right now, no. We're not seeing systemic debt crises. But that said, we are very concerned because you will see, we will have a new update to the World Economic Outlook, it will come out on the 26th. We will be downgrading growth for the world, for many countries, again for a third time in a row. And that's not over yet because the downside risks are still many. For instance, you know, a gas shut-off, completely, from Russia, would have a much bigger effect. China, COVID, lockdowns could again come up and you could have big effects over there. And inflation is a big problem.

So we are absolutely concerned about what's happening. Unlike before the GFC. Yeah, I would say even before the GFC, and before the taper tantrum, actually, one difference is that at that point, there was a large amount of capital

flows that went into emerging and developing economies, right? This time around, we never had that big run-up inflows. So that's one difference.

Secondly, many of these countries have more foreign exchange reserves than they had back in 2013. And that also, kind of, gives them some protection. But again, overall, among the top three things we worry about, this is one of them, for sure.

Man: Thank you, Gita. Wonderful talk. And I had two questions. One, maybe you can't answer. But I was curious, sociologically, what it was like, you know, to think about these changes and think about institutional view maybe that was there. Could you speak to the challenges and how you saw that in terms of thinking about policy tools that people thought were just bad, and then instead of going to, I think, a better view, which is, well it depends on how you use them, and so on. And I imagine that's progressive, but had some interesting, you know, maybe institutional blockages there.

And the second is more, I think you mentioned briefly commodity prices, which is, I think, another interesting part of the cycle for emerging markets and how that fits in the integrated framework. Should I think of that as the CAPA, loosely or something else? Thank you.

Gita: Yeah. And so, I guess the steepest learning curve was the first question you had about how do we convince people about something that seems eminently clear, right?

So if you think of the change that was done to the institutional view, it was basically saying that, you know, once you believe that there is financial instability and the risks to financial stability, then you should X-ante want to put some measures in place. Right? It's as simple as that. Which was not there in the original institutional view, unless it was allowed if you were in a period when you were getting a lot of inflows. So like the quantitative easing period, you know, that's when there was like, Okay if you're getting a surge in inflows, you can deal with it. But there was no concept of tying it to the stock of debt. So the stock of debt was not a parameter, right? So if you're a country who's not getting a surge in inflows, but you have a large stock of debt, and if you tried to do something to, kind of, steal [SP] that debt away from foreign currency and local currency, that would not be allowed, preemptively. Right? So that was a change that we that was made.

And in terms of the sociological aspects, I think one was very much the case that you know, we had some authorities in a country, you know, I would say we

had central bankers in some countries that said, "You know, it helps when the IMF says don't do this, don't do this, right? Don't use these instruments, because then I don't get calls from some authority. Some of my folks who say, 'Well, IMF says now you can use all these instruments, why aren't you doing it?" Right?

So in fact, while there's recognition that these tools can be used and they're valuable in some circumstances, they're just very worried that it will get misused, and that we will get calls saying, "Hey, the IMF says use FX intervention, do this and do that."

So a big part of dealing with that was basically when we wrote the board paper was just the language. Like, under what circumstances would this be okay? Being very, very strict on that. So that was one.

And then the second thing, which is a good point, is, you know, ultimately, every country wants to become, you know, presumably the U.S., and have the kind of markets that the U.S. has. So the question is, well, if you're going to allow these kinds of instruments, are you going to impede market development? Right? Are you going to do that? So are you basically getting a short-term gain, but then a long-term loss?

And so then there was a whole bunch of work with Empiric, trying to convince people about, you know, given the initial conditions now, this is what you do. But nobody's telling you that you don't continue developing your markets, you don't increase the depth of your markets, and so on.

So yeah, so I think a big part was basically the kind of the suspicion of some of these instruments will sound like then anything goes. I think the basic worry is I'm basically saying anything goes.

And my take of this was, on the contrary, because when we did not have the framework, in some sense, when the country authority said we needed to do this for XYZ reasons, we were much more in a position where we said, "Well, I guess you have XYZ reasons," right? Now, because we have a framework, we can actually ask the questions about it. So I actually think it's more disciplining when you actually have this. So I think this was a part of it.

So the framework that we have, I only looked at one kind of shock, right? Are there are commodity prices in there? And again, if you don't have any interaction between commodity prices interacting with financial frictions in some way, you wanna let the exchange rate move and you wanna let it do its job. Right? But if it does interact, then, of course, there's more than one.

Jim: [inaudible 01:02:48] thank you.

Gita: Oh, thank you.

Jim: Let me just say that this was a talk that Marty would have enjoyed enormously, right? If you followed closely what Gita just did, in some of the early slides, she was talking about papers, including some of her own that have been published in "Econometrica," the "Restart," and various places in the last few years. And by the time she got to the last slide, she was telling us how that work had immediate application to thinking about really important questions that are being faced by the IMF today.

And that was something which Marty not only did, it was the kind of hat trick that he could pull off of managing to publish cutting-edge research, but at the same time, connecting it with very important policy questions. But this was also precisely the sort of demonstration of the interplay between the research frontier within economics, not just empirical economics, but theoretical economics and understanding how that can be channeled to make policy better and improve the lives as we know of, you know, literally, hundreds of millions or billions of people around the world as the IMF carries out its mission.

So Gita, thank you so much. I think I bubbled the title introduction and not saying the first deputy managing director... I did it again. First deputy managing director. I'll practice that on the way home. But thank you very much for coming to join us. Thank you all for watching tonight and