

Interview with Jeffrey Franks from IMF Europe

Internship Reports and Master Thesis

How to measure poverty from above?

POVERTY



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Write to us at the.tseconomist@gmail.com.

Contact us:

the.tseconomist@gmail.com

www.tseconomist.com

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Editorial's Note

Welcome to The TSEconomist's 32nd issue, which is also the first issue of 2023. 2022 added one more year to a repeating or, for some, "rhyming" history. Russia's invasion of Ukraine marked the start of 2022 with global unrest, a fashionable way to evolve for this decade. As missiles were dropping, global energy prices soared, inflation rose, and climate heated. The sharp slowdown in growth raised the chances of stagflation for many countries. And we know that occurring social, political, and economic events have an unequal impact on the rich and poor. Thus, it would not be too absurd to assume that "the poor stayed poor, and the rich got rich" again.

Therefore, amid political and economic challenges to economic growth and the looming climate crisis, our magazine decided to dedicate this issue to poverty. In the spotlight section of the magazine, the authors penned unfolding poverty issues in Syria, South Africa, Costa Rica, and Mexico. You may also find articles on climate migration, the macroeconomic implications of a strong dollar environment, and the usage of satellite imagery to combat poverty.

Our editorial team tries to find enjoyable as well as important topics for the theme of every issue. We encourage our writers to push the economic way of thinking when they write about global challenges and the methods of tackling them. We hope this issue will deliver to the reader the sense of urgency of poverty and the joy of tackling it.

We wish you a good read.



Fikrat Valehli
Editor-in-Chief



Interview with

Jeffrey Franks

by
Anukriti Goel
and Naemi Riess

Europe was on its way to exit the pandemic at the end of 2021, but Russia's war in Ukraine changed the picture completely. Europe has been hit by a massive trade shock that has weakened its growth outlook and raised the level of inflation, leading to a cost of living crisis. Output growth in advanced and emerging European economies is forecast to fall from 3.2 and 4.3 percent in 2022, respectively, to 0.6 and 1.7 percent in 2023. As the war unfolds, the tragic humanitarian crisis has displaced about 7.5 million people, of which 4 million are in the EU.

Meanwhile, the natural gas imports from Russia, until recently the EU's largest energy supplier have almost dried up, pushing the continent into an energy crisis. The Russian pipeline gas exports began to decline in mid-2021, and have fallen by 80 percent by mid-2022, including total supply cuts to several countries (Bulgaria, Denmark, Finland, Germany, Lithuania, The Netherlands, Poland). As a result, natural gas and electricity prices skyrocketed. Domestic inflation reached 9.3 percent in advanced European economies while 14.9 percent in emerging European economies. High energy prices also represent a major supply shock for firms, especially energy-intensive ones. Many European firms have already curtailed or plan to cut production in sectors such as fertilizers, glass, steel, and aluminum manufacturing, which will likely result in additional price increases across value chains.

Most of the energy price surge is expected to be temporary, but Europe will still end up facing higher energy prices than before the war. At the same time, spending needs to be reprioritized, increasing tariffs for upper consumption levels and for peak demand hours would encourage better-off households to reduce demand and create room for critical consumption of vulnerable households and energy-intensive firms. Steady implementation of structural reforms remains essential to mitigate energy security risks, accelerate the green transition, ease labor market tensions, and boost productivity and potential growth, all of which will ease supply constraints and lead to lower inflation down the road.

When did you decide that you wanted to work in the field of economics and what was your motivation behind it?

I started the university studying physics. I love science when I was a kid. And after about a year and a half I decided I would be a mediocre physicist. But I had always also loved politics and current affairs. So, I switched from physics to political science and as part of political science I had to take economics. I just found it so incredibly intuitive and everything made sense to me. I thought this is it.

I ended up doing a double degree in political science and economics for my undergraduate.

Immediately, when I started studying economics, I could see how all the calculus and differential equations I knew from physics would be relevant to economics as well. It was like "oh, I get to use the math that I already learned!"

After completing your studies was it your dream to work for an international institution such as the IMF or the World Bank?

I think that because I have been interested in current affairs and what is going on in the world working at the IMF and World Bank had been high on my possible job list when I started my PhD studies.

When I finished, I did think about academic jobs but when I got an offer from the IMF I took it and I am with the IMF for 30 years now.

But going into academia was also an option that you did consider?

I did. I thought being an academic I could teach, which I really enjoy. I could do research that I have been enjoying doing during my PhD. So, it was indeed a possibility, but I didn't want to spend my whole career just doing academia. I thought it would be good to have at least part of my career in actual policy work using the economics to make a difference somewhere.

Can you summarize your journey at the IMF in one sentence?

I have been able to work with countries all over the world with

many kinds of economic challenges and I hope I have made a bit of a difference in those countries.

During your time at the IMF did you ever face any challenges when negotiating with developing countries for example in your position as mission chief of Pakistan?

When you oversee an IMF team and you are negotiating an IMF loan, you are trying to come to an agreement with the country about a set of economic policies that the IMF can support and the exchange for those economic policy changes. Then we provide financial assistance and sometimes that financial assistance can be quite significant for the country.

Nobody ever tried to bribe me or anything like that but there is a challenge because often you may have a perception that some people in the government are not completely honest. And that is a challenge. What we try to do in the IMF is that we make sure that our money is used properly and we do have safeguards and controls on what happens when we disperse our money.

Certainly, in some countries you are more effective than in others because the IMF is only on one side. You want to help countries to have better economic policies so that they can do better and people in that country would be in better situation but sometimes you are not able to achieve it because you can't reach an agreement. Sometimes they don't comply with the conditions, and you don't get the results that you want. So, it is difficult.

You have been working for the IMF office in Ukraine. Is it frustrating for you to observe that some economic progress, initiated by the IMF in Ukraine, is now at stake due to the invasion of Russia?

In in all of the countries that I have worked in, I have grown fond of the country and I wanted them to succeed. In several cases, I have seen where there might have been a change of government and the policies were undone. And that can be a little bit disappointing or frustrating.

Obviously, in the case of Ukraine, it is a much more serious issue because it is a war. Ukraine had many economic challenges before the war, they had a lot of governmental issues but they also had an enormous economic potential. Ukraine has a highly educated population and if they could get their management of their country right, they had the potential to be a prosperous part of Europe. But of course, once you are in a war where a significant part of your territory has been overtaken and when much of your infrastructure has been destroyed, it will take a very long time for Ukraine to recover economically from where it is.

Now, I do hope that the international community which stepped forward to provide military support for Ukraine also will step forward after the war to ensure that the reconstruction in the country goes ahead.

We were wondering if you could tell us if and what the impact of the crises we face today, such as the war in Ukraine or Covid-19, are on the work conducted by the IMF? For example, concerning macroeconomic forecasting.

Traditional econometric tools work reasonably well when you don't have structural shifts in the economy. Obviously both covid and the energy crisis are kind of a structural shift that causes a

breaking. So, you have to modify your models and we do that in the IMF.

For example, we have models that have as an input the price of energy and that can take into account part of the energy shock. But it doesn't take in the full effect of the shock because there are effects that go beyond the price effects. There might be quantity restrictions in some countries because if they can't get the gas that they need, there are confidence effects that arise because this has been brought about by a war. These effects often don't get accurately captured in economic models. In the short run, you have to take your models and then you have to apply judgment to them, knowing what the nature of the shock is, and how it might move. This implies that the margin of error around your forecast is much larger in the medium. You can think about ways of trying to incorporate those changes into a new parameterization, of whatever model that you are using to forecast.

And generally, in the IMF we use multiple methods. Our research department runs centralized global models as well as regional models. And then each country team runs its own forecasting of its individual country and then we try to see where those come together and where they differ.

Recent political and economic developments point to an increasing polarization in the world politics. This is aggravated by Russia's unprovoked aggression in Ukraine. In this polarized setting how do you see the IMF's role as an international institution?

“When you are facing the risks of fragmentation around the world that's when, in my opinion, international organizations become even more important.”

When you are facing the risks of fragmentation around the world that's when, in my opinion, international organizations become even more important. The IMF, the World Bank and the World Trade Organization all had their roots in the fragmentation that took place in the great depression and the huge disruption caused by the second world war. Those experiences showed that only international cooperation can help safeguard the world economy going forward and avoid similar problems.

Now, over the course of the years, some countries grown enormously, and they are important to the world economy, like China or India, and they want to have a bigger voice in how the international system works. And that is right. The challenge is for organizations like the IMF to be able to bring those rising countries into the system and help them profit from international cooperation, rather than confrontation. And fundamentally our belief is that if we cooperate in international economic policy, the entire world is better off.

But it is very clear that when you have more polarization in the world then it becomes harder to maintain that cohesion of the international system and certainly this is one of the periods that

we are passing through now.

Our next question relates to the UN climate change conference in 2022. Pakistan, where you have also been active with the IMF, has been hit by some of the worst floods and has caused a lot of destruction and monetary burden. Do you think establishing a loss and damage fund will help alleviating monetary burden?

The main purpose of the IMF is helping stabilize, macroeconomic policies. The World Bank is called in countries for flood relief and dam building and canals and that sort of thing. Nevertheless, we worked together in these instances. Having said that, it is very clear that climate change is one of the biggest challenges that the world faces in the coming years. Not just a technical or ecological challenge but also an economic challenge. This is because the kind of damage that can occur in countries because of the climate change, both the increase of frequency of a natural disaster and the general rise and sea levels, could affect low-lying countries.

Those are reasons why we are involved in climate action - because we think it is macroeconomically important. And in fact, we have been hiring many climate experts to the IMF staff to try to improve own expertise in this area. What we have done recently is that we created something called the Brazilians and Sustainability Trust, which is supposed to be designed to help poor countries. These are set up to support countries when they are faced with some kind of a crisis, could be a climate-based or a food crisis.

If a crisis has macroeconomic significance countries can also receive support from these trusts. Additionally, we have been in discussions with Pakistan on a new loan.

More generally, there is a general consensus in the world that rich countries are going to have to help poor countries if we are going to solve this climate problem. Poor countries are not going to be able to fully mitigate the damage of climate change, and they are not going to be able to fully adapt to new carbon free technologies unless they receive some assistance.

What we are concerned about is countries like the Maldives or Bangladesh, which have similar if not even worse problems with rising sea levels than the Netherlands but don't have the long history of technical expertise or the money to address those problems. Hence, there has to be a role for the richer countries helping the poor.

And finally, of course, everybody needs to reduce their carbon emissions. If the rich countries can provide financial assistance to encourage the poor countries to reduce their emissions, then I think it's a win-win for both sides.

We would like to ask about (moral) dilemmas the IMF may be facing when negotiating with countries for possible solutions. How do you approach these dilemmas in the IMF?

For IMF programs we are often called in because countries have unsustainable fiscal balances, so they are spending more than what they are bringing in tax revenue. That means, as part of the IMF program, they are going to have to reduce that gap: they are either going to have to raise taxes or have to cut spending or some combination of those two. And then you do have real questions, what taxes should be imposed, who should be addressed?

The IMF tended to take a more neutral point of view on this. That is, we were not going to tell the country exactly which taxes or which expenditures to change - they would decide. But in fact, what we found is that sometimes under new policies more vulnerable populations were hit and actually, undermine political support for macroeconomic adjustment.

So more recently something like 80% of our IMF programs have conditionalities in them on protecting vulnerable populations. They might say you have to raise income taxes but keep them lower for the lowest income statements.

Having said that we do want to try to give governments flexibility and not be dictators on what policies they can do and what they don't.

Do you have any suggestions for students who are planning to pursue a career at an international institution such as the IMF?

In the IMF we generally hire two groups of people. We hire PhD students working on macroeconomic issues who are finishing their PhD studies. As part of the economists' program we usually hire about 30-40 economists per year from all over the world.

If you have a chance to apply for an IMF internship before applying for a position this might increase your chances because then you already have people inside the organization that know about you. Of course, it is also helpful to have done other work related to the IMF for example, working for a development agency or doing an internship for central bank.

The second way we hire people is the so-called mid-career economists. And these are generally people who would have a master's degree or a PhD but they would have five to 10 years of experience.

These are typically people who would be working in a central bank, a ministry of finance, or in another organization. At that level, we do hire generalist economists, but we also hire very specific skill sets, such as climate economist, tax experts or financial former banking supervisors. ■

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SPOTLIGHT



The Destitute from Damascus

Syrian Refugees and their story of living at bare subsistence levels.

Rito Chakraborty

The war in Syria has lasted so long that Britain has seen four Prime Ministers in the interim. New revolutions have sprung since the Arab Spring of 2011, and the geopolitical map of the Middle East has changed. What remains unchanged, is the dictator in Damascus,

and the war he has been waging against the Syrian citizens. Since March 2011, 6.6 million Syrians have fled their homes. The majority (5.5 million) fled to neighbouring countries like Jordan, Lebanon and Turkey. A million Syrian refugees fled to Europe.

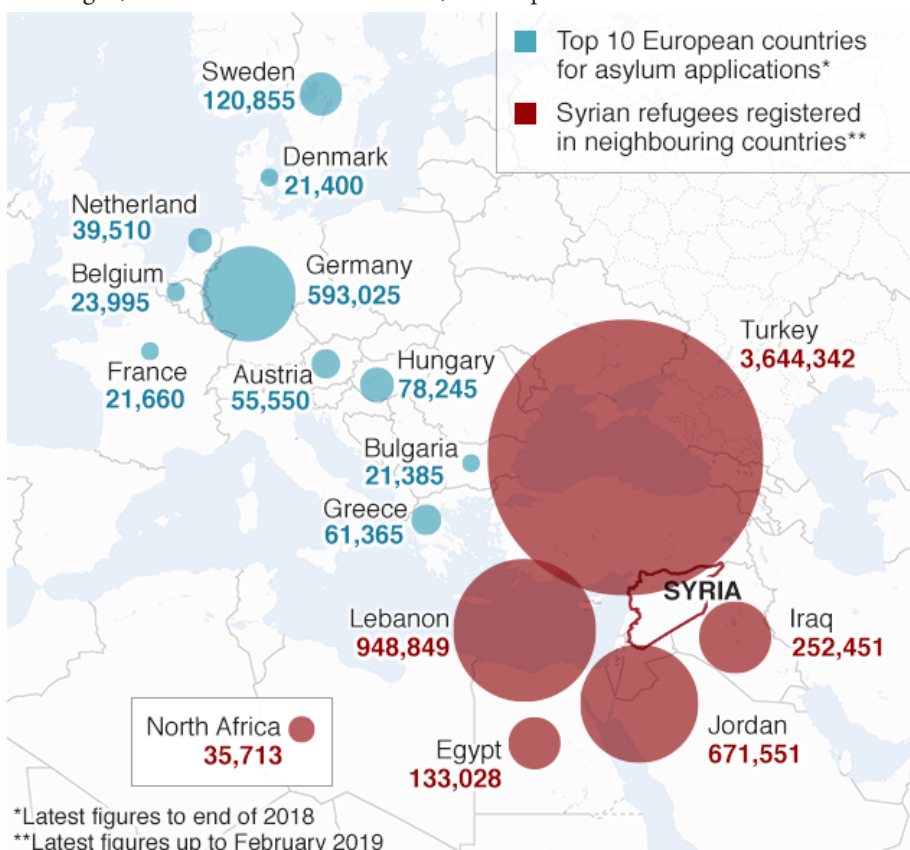
The past ten years have been nothing short of a battle even for those who fled the war. Many have lost their families in search of shelter, food and work. According to the UNHCR, close to 70% of these refugees live in poverty. The conditions have worsened more so in the past three years of the pandemic.

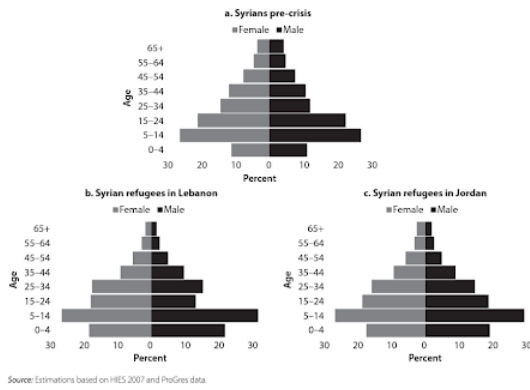
Refugees in neighbouring countries

A study done by the World Bank Group to estimate the welfare of Syrian refugees in Lebanon, finds that the share of Syrian

The past ten years have been nothing short of a battle even for those who fled the war

refugees living in poverty has risen by 56 pp since the start of the pandemic. Meanwhile, the share of poverty amongst the Lebanese population has only risen by 38 pp. During the pandemic, digital divide hit the refugees hard, and kept many children from school. In many parts of Jordan and Lebanon, forced child labour increased. Domestic violence and child





marriages amongst refugees in parts of Kurdish Iraq, have also gone up during the last three years. Conditions are worsened by the growing inflation, high food prices, and the host countries' dire state. Lebanon's economy, for example, has been on the verge of collapsing for years. On a whole, nine out of every 10 Syrian refugees across the world are below the poverty line (UNHCR, 2021).

“The living conditions of Syrian refugees and their host communities are very worrying....The human cost of the current crisis is high. The COVID-19 crisis has taken a huge toll on people’s well-being and their prospects for the future. People are cutting down on meals and taking on unsustainable debt, while we also hear about rising child labour....”

~Ayman Gharaibeh, Director of UNHCR’s Bureau for the Middle East and North Africa.

The question that arises is what determines the well-being and welfare of these refugees and what has been going wrong. In a report released by the UNHCR and the World Bank titled “The Welfare of Syrian Refugees”, a detailed modelling exercise has been trying to configure where the policies have been fraught. The authors try to model subsistence level through household appliances like the availability of refrigerators, fans, bedding and others to estimate their income levels and welfare. The intermediate results are that a major determinant of poverty is the number of children a family has, and their condition of housing. In Jordan for example, an additional child in a family increases poverty by 17%. Around 60.3% of the refugees in Jordan and Lebanon live in makeshift housings changing their settlements every 7-12 months. This does not allow families to focus or make decisions about children’s education. For short contract settlement, often a 12-month payment has to be paid upfront, a hurdle

which puts many families into debt.

Interestingly, many of the highly skilled Syrian refugees have high levels of poverty, despite having excellent employment records back home. Research by the International Labour Organization (ILO) has revealed that in Jordan and Lebanon, the Ministry of Labour often delays granting work permits to refugees

[...] promising refugee-friendly policies that looked bright in the past few years were merely short-lived

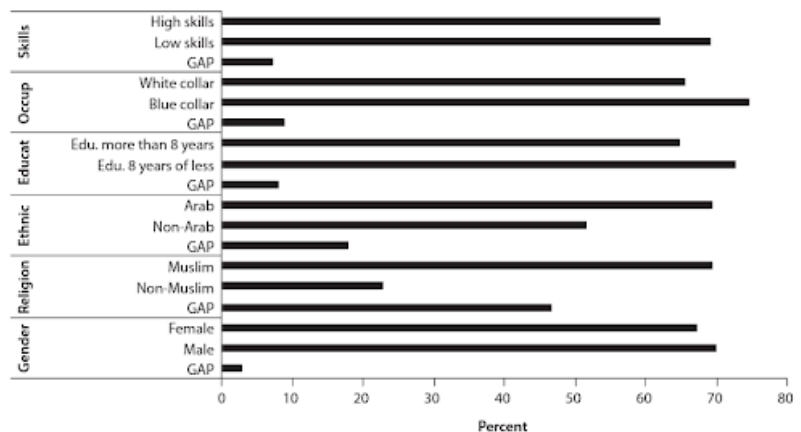
under the guise of background checks. Investigations into irregularities in the housing system disclose that many Syrian families are denied asylum. The basis of denial being, that the Primary Applicant (a family’s main representative applying for asylum) has entered the country informally. It is quite ironic, given that the majority of refugees have no choice than to flee into neighbouring countries

informally. There is impeding discrimination even amongst the applicants, leading the ethnic Arab refugees to have a 15 pp higher poverty rate.

Such complex situations have often been riddled with many policies. However, labour laws across the paradigm are equally cryptic. In Jordan, as per the Rules of Origin agreement with the EU, any factory has to hire a workforce with a 15% share of Syrians, when it starts its operations. The loophole however is that once the factory reaches 60,000 legal jobs, the quota ceases to exist, making refugee workers easier to fire. This effectively means that the promising refugee-friendly policies that looked bright in the past few years were merely short-lived. A common understanding that seems to be amongst the host nations is that the so-called ‘refugees’ will someday return to Syria, which in turn has resulted in policies with short outlooks.

Refugees in European Union

Across the EU, refugees face different kinds of problems. Societal integration and mixed confusion surrounding the legal status being the top. However, even in Europe, Syrian refugees struggle economically. In Sweden, the second biggest host of refugees in the EU, the housing allocation has been a temporary settlement system from the beginning. By 2020, the Sweden Syrian Association claimed that its housing shortages had led many families to find shelter at black market rates. Many major German cities, in particular the Bavarian region, have been encountering similar crises. Such incidents show that even providing basic facilities to the refugees is a challenge to tackle. However, policies supporting refugees with basic facilities do exist. In Ankara, a joint programme of the UN World Food Programme and the European Union has



Source: Estimations based on ID4-IV2 data. Note: The gaps are all significant at the 5 percent level. The values of the z-statistics are the following: Gender: 5.8; Religion: 113.1, Ethnic: 4.6; Education: 3.69; Occupation: 19.7; Skills: 15.3.

been running the Emergency Social Safety Net (ESSN) since

[...] Syrian refugees should be rethought of as ‘immigrants’- someone who has migrated to a new country permanently

2016 to provide cash transfers to asylum seekers and prevent 1.7 million from falling into poverty. The crux is that the EUR 19 monthly allowance to each member of the family is just not enough given the inflation in Turkey.

I am a teacher. I have a certificate and good experience but I can't find work. I had interviews in several schools but as soon as they know I am Syrian they say "you need a work permit, you need to follow procedures, and it is not possible to give it to you for teaching"

~A 50-year-old Syrian woman in Amman, Capital of Jordan (through International Rescue Committee)

Deportation and austere measures from host country governments have been new obstacles for refugees. Erdogan in Turkey has been pressing for the return of the Syrians, assuming that the war in Syria has subsided. As reflected in its resolution adopted in March 2021, the EU expects a similar future, with Italy and Denmark being the first of the nations to send clear signals through their respective ruling party's austere outlooks. The reality however is that most Syrian refugees do not seek to return within the next two years. An extensive survey done by researchers of the Immigration Policy Lab, think-tank based at Stanford University, reveals that while close to 60% of refugees say they would want to return to Syria someday, only 5% said

they wanted to return over the following year. The reasons for not willing to return, indicated as 'push' factors, are the concern of violence and safety and the dearth of economic opportunities. Clearly the war in Syria is far from over, and the refugees cannot be expected to return.

In this regard, the EU and neighbouring countries need to rethink their partnership and Compacts programme (an agreement between EU and Jordan-Lebanon to improve educational access) to shift policies towards the assimilation of refugees rather than just their sustenance. International organisations need to accept the dire consequences the refugees face post the pandemic and come up with ways to enable refugees to integrate economically. Policies need to be more synchronous to development rather than mitigating for their refuge. One might even like to wonder if Syrian refugees should be rethought of as 'immigrants'- someone who has migrated to a new country permanently. ■

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Damascus



Mexican poverty

The core socioeconomic catalysts across the 21st century

César Manuel Martínez Soto

Throughout the first quarter of the 21st Century, Mexico has had to continue its long-lasting battle against multiple socioeconomic issues, among which poverty occupies a prominent place. For the last 22 years, poverty has always affected at least 42% of the total national population while the average Gini Index was 48.8% and the economic participation rate of the 20% lowest paid population sectors remained under 4.4% (CNEPDS, 2022; Széleky, 2017; INEG, 2021; World Bank, 2022). The question has always remained the same: Why is it that poverty continues to trigger such severe statistics for these affected families after almost 4 different federal administrations and a continuous political spotlight on the issue?

To answer that question, perhaps it would be necessary to shift focus away from statistics for a moment. While they are always useful for quantitatively endorsing or disqualifying any action taken to combat today's aggravated poverty conditions, statistics fail to appropriately assess these actions' actual accuracy and pertinence in relation to the social context in which

they are implemented. Therefore, understanding non-contextualized statistical data (often the sole sustenance for many recent national public policies intended to combat the issue) can only account for half of the required social elements to address Mexican poverty. Having a full panoramic

***understanding
non-contextualized
statistical data [...] can only account for half of the required social elements to address Mexican poverty***

view over the social, cultural, economic and even political scenario represents the other much needed half part to the poverty puzzle. Given its multilateral and complex nature, poverty in Mexico could

only be properly approached through an analytical lens as multifaceted as social sciences. Through their subjects' option range and academic insights, social sciences represent an often overlooked yet potentially effective tool to contribute to diminishing poverty's effects on the Mexican population, justifying this article's reason to existence. Naturally I do not intend to provide any definitive answers to solve the poverty problem. What I do pretend to showcase here is an analysis and identification process, by means of social sciences' tools and previous literature, of a core set of political, social, and economic circumstances for which there is enough evidence to attribute a significant degree of causality to Mexico's current poverty context.

Corruption is probably one of the most commonly blamed reasons for poverty conditions in Mexico. According to Transparency International, the country averaged 33 out of 100 points in the Corruption Perception scale between 2000 and 2021, standing at an overall 103th place out of 180 countries comprising the

whole index (Transparency International, 2022). Understanding the sociopolitical implications of such numbers, however, is what makes this phenomenon truly relevant regarding poverty indexes. Let us comprehend this connection by looking at it from a sociology and political studies' literature standpoint. Following American scholar Mancur Olson's book *Logic of Collective Action*, minor factions with individual interests tend to emerge from within government institutions or political alliances which initially agreed to pursue specific common goals, thus leading to conflicting interests and other actions such as economic malfeasance (Olson, 1965). Mexico is no stranger to this. Indeed, in 2017 one of its dominant political parties, PRI (former president Peña's party), was said to be using shell companies to destine over \$17 million USD from taxpayers' contributions to its national party leaders according to a New York Times article (Gutiérrez, 2022). Olson's theory about individualism within collective action, in addition to a long list of examples like this one, go on to demonstrate a classical economy theory about human behavior later nicknamed "the tragedy of the commons" in 1968 by ecologist Garrett Hardin: uncontrolled self-interest among members of any group will inevitably damage all generalized welfare of such group in the long run (2022). This is then aggravated by the impunity conditions in Mexican law which allow for a vicious cycle with corruption at its center to be formed in daily national politics, as proved by Mexico's frequent appearance in the Committee to Protect Journalists' (CPJ) yearly Global Impunity Index over the past 10 years. Only now can it be more accurately concluded that poverty comes in part as a direct consequence of an unstopped and unpunished case of corruption. This then greatly reduces the national population's access to economic resources and opportunities to improve life conditions and social development among its most vulnerable citizens.

A 2017 federal government poll found that Mexicans consider the "lack of development opportunities and ineffective public policies" as key elements in recently high poverty indexes in the country (Cámara de Diputados, 2017). To study this next factor, let us consider contextualized economic data. Based on Mexico's national statistics center, INEGI, 60% of the economically active population throughout the past 22 years have earned no more than \$8,000.00 MXN (about \$410.00 USD) in a monthly basis (CNSM,

2022; INEG, 2022). Out of that income, no less than 23% will be destined to buy the most basic food basket. Other expenses include housing (47%) and private transport (31%) to name two of the most common ones. Just these three elements make it difficult for a traditional 4-member family to make a proper living out of a single salary, forcing them to sustain multiple economic activities to just prevent joining the poverty statistics. Under these circumstances, the government would be expected to intervene and ease this socioeconomic burden through social programs. Yet, evidence shows that the recent Mexican federal approach has failed to fulfill this objective. I will specifically

[...] the government would be expected to intervene and ease this socioeconomic burden through social programs. Yet, evidence shows that the recent Mexican federal approach has failed to fulfill this objective

refer to the current government program "Jóvenes Construyendo el Futuro" (Youth Building the Future) to demonstrate the latter. While this initiative provides a monthly \$185.00 USD pay to young people who currently don't study nor have a formal job in exchange for them taking a course to prepare themselves for the labor market, there are few to no strict mechanisms to guarantee their assistance to said courses. As a result, the program has become a virtually "free" income source since its inauguration. No economic productivity is being incentivized and neither does it contribute to reducing poverty levels within the country. In summary, there has not been any real social change towards economic flourishing being produced by this and several other related public policies. This leaves no space for a breakthrough of the status quo where socioeconomic development opportunities are lacking and there is a dangerously high economic dependency on the government for most Mexican families.

Although the previously addressed aspects focus particularly on those individuals who experience poverty firsthand, it is crucial to investigate further on the non-affected population sector, considering Olson's remarks on the close interrelation between all members of a state's society⁶. Having observed the very reduced direct influence that Mexican poverty-stricken citizens possess over corruption, the lack of development opportunities, and failed public federal policies, it is surprising to see 40% of the previously mentioned government poll's participants affirming that "people are poor because they've decided to be so"¹⁰. Such a fact could support a theory about poor socio-political awareness from these individuals, leading to false beliefs and a potential lack of interest in contributing to solving the poverty issue in Mexico. On the matter of disinformation, Polish professor Dariusz Jemielniak explains in his book *Big Thick Data* how contextualized, mass-spread statistics could contribute to debunking these myths and encourage citizens to take civil action against poverty and prevent a Tragedy of the Commons from falling upon them. With that idea in mind, it would then become a matter of joining efforts (ideally between public and private entities) towards constructing innovative strategies to systematically decrease the effects of poverty on the Mexican population.

I shall clarify once again that no real solution pretending to address the harsh socioeconomic consequences of such a complex and multilateral matter like poverty could ever be fully stated in these many words. The pursued objective with this article was to put into evidence the fact that quantitative statistical inquiry cannot be presented as the only evidence of a complete social phenomenon study, and that it is precisely this social element that must also be fully scrutinized to reach richer and better adapted conclusions. By utilizing social sciences and their analytical tools including sociological and political studies' literature, contextualized economic statistics and first-hand evidence through national polls, three fundamental causes of poverty were identified and properly justified within the Mexican context: political corruption, ineffective public policies with a lack of development opportunities, and social unawareness about the issue. Finally, with the current advancements in data processing and that of technological tools, social sciences are becoming more accurate by the day. They should then provide enough tools for

those interested in the matter to start proposing nationwide strategies that take into account the true social complexity of poverty. And, most importantly, these tools would prevent oversimplified and cherry-picked solutions that may result in economic losses for governments and societies around the globe. ■

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Inequality Traps and Development in Costa Rica and South Africa

Guillermo Pastrana Torres and Justin Standish-White

Inequality is an issue that lies at the core of key issues facing societies at a global level such as the cost-of-living crisis or the cruel irony of the 10 richest men in the world doubling their wealth in a pandemic that saw millions worldwide lose their jobs and have their livelihoods threatened (Elliot, 2022). Within economics, inequality is also becoming an increasingly important area of focus with Thomas Piketty and others working on wealth inequality (as opposed to the norm of income inequality) and authors such as Branko Milanovic look at inequality on the global scale as opposed to the national.

However, such work often views inequality as the phenomenon to be explained, investigating its determinants. This presupposes that inequality is, intrinsically, a negative outcome that policy should seek to address. This, in turn, seems to be a question for the political philosophers such as Rawls (or for the dying breed of interdisciplinary economists such as Amartya Sen). However, one can also make an economic case in this regard - by considering the negative socioeconomic effects of inequality.

That is the focus of this essay, written in the context of two developing countries: Costa Rica and South Africa. Both are leading economies regionally but face certain development challenges due to their unequal economic structures. South

Africa is the most unequal country in the world with a Gini index of 63 and an economy where 10% of the population earn 60% of the income and hold 95% of the wealth (Francis & Webster, 2019). Costa Rica, on the other hand, is less unequal with a Gini index around 50, where the richest 20% earn 50% of the income, and the poorest 20% only 5%. Costa Rica's economic activity is concentrated in the central region of the country, creating substantial inter-regional inequality (INEC, 2018). Some recent statistics on Figure 1: Poverty and Inequality Trends, 2000-2020.

The roots of these inequalities are complex and for discussion elsewhere. For now, we're going to look at how these unequal structures constrain development and poverty alleviation in these two countries, particularly through political and social factors.

Political Effects

State corruption in South Africa has persisted from colonialism, through apartheid and into the modern democratic era (Hyslop, 2005). In recent times, corruption allegations have revolved around former president Jacob Zuma, subject of several major corruption scandals including major international arms deals and the construction of a swimming pool for 'security purposes' at his private residence (Haffajee, 2021). Such scandals also occur

at the lower levels of government, with corruption and mismanagement scandals affecting the removal of asbestos from homes in the Free State province and the upkeep and functioning of the South African power utility, Eskom. The hundreds of corruption tales all have threads

[...] it would take nine generations for a low-income family to reach the median income level

of nepotism, vast patronage networks and rent-seeking at their core, whilst the average citizen suffers at the hand of lacklustre service delivery. Whilst not directly linked to inequality, economic desperation often incentivises corruption and, further, inequality undermines social cohesion and trust which promote good governance (Oishi et al., 2011; Graafland & Lous, 2019).

In addition to the misuse of government funds, inequality can also undermine the state's response to major shocks and crises. This was plainly evident when South Africa imposed some of the strictest Covid-19 restrictions in the world in



2020, with regulations that could not be meaningfully adhered to by many South Africans (De Groot & Lemanski, 2021). For example, those without cars or nearby access to grocery stores could not easily reduce the frequency of their shopping, never mind the infection risk of relying on crowded public transport. Additionally, with millions of families losing sources of income and limited support from the state (the Covid Social Relief grant paid out a paltry R350 monthly (around €20) per month), many could not stay home under lockdown, having to go out in search of work and an income.

The deep political ruptures due to inequality are equally evident in Costa Rica. According to the Universidad Nacional (2021) the Costa Rican political system suffers from serious fractures due to social inequality and decline of good governance values in public administration. This decline has occurred due to inadequate social policy and the manipulation of regulations to facilitate corruption. Recent cases showcase the impact of this corruption. According to judicial investigations, the ‘Cochinilla’ case involved a relationship between State structures such as the Ministry of Public Works and Transportation and the National Highway Council, to favour certain companies unfairly in the tenders for road works, affecting the quality and/or cost of the projects. Another case concerns the state water utility, in which a group affiliated

with drug trafficking exploited its contacts within the utility to launder money through public works tenders.

Furthermore, recent reports by the Commission for Latin America and the

[...] inequality leads to skill attainment being limited to a small portion of the population, slowing down economic development and concentrating economic advancement amongst the better-off

Caribbean (2020) argue that the institutional weakness of the Social Rule of Law and the social exclusion associated with the concentration of wealth accelerated the spread of Covid-19 in Costa Rica. According to the PEN (2020), the spread of the virus was accelerated mostly by overcrowding, particularly in

smaller spaces. During the weeks of “stay at home”, families had unequal opportunities to stock up on food or make use of food delivery services to meet their needs. Approximately 335,900 households (21%) were in poverty before the crisis, of which 93,500 did not have the minimum income to cover basic food needs. These economic constraints created a stark contrast in the effectiveness of quarantines when compared to higher income families.

Socioeconomic Effects

The most pernicious aspect of inequality from a socioeconomic standpoint is its entrenched nature, restricting social mobility across generations. This is plainly evident in South Africa, which ranks 77th out of 82 countries in social mobility according to the 2020 Global Social Mobility Report (World Economic Forum, 2020). This means that, on average, it would take nine generations for a low-income family to reach the median income level, as opposed to two in Denmark and six in France. Another way to measure social mobility is to look at intergenerational earnings elasticities (IGEs), i.e., the % change in a person’s income if their mother or father’s income at the same age were increased by 1%. These levels are very high in South Africa, particularly at the extremes of the income distribution, with the IGE at the bottom 10% being almost 1 (Finn et al., 2016).

The persistence of this inequality, despite

equal rights and increased educational attainment at a secondary level, can be partially explained by how inequality affects educational decisions, particularly the decision to pursue tertiary education (Piraino, 2015; Pellicer & Ranchhod, 2012). Potential university students from poorer backgrounds face financial constraints when the state support scheme does not apply, and, in addition, there is substantial inequality in the quality of education available - with the best schools in the country being private and charging extremely high fees. Not only does this undermine national educational outcomes, but it also reinforces the long-term inequality trap.

The impact of inequality on direct educational outcomes was clearly apparent in Costa Rica during the early periods of the pandemic as learning went online exclusively. According to UNICEF (2021), the disparities in educational quality were aggravated due to a lack of technological infrastructure, with 63% of students having problems accessing devices and/or the internet. This occurred alongside an increase in cases of violence against children and adolescents, now remaining at home all day.

In terms of social mobility, Costa Rica ranks 44th out of 82 countries (WEF, 2020). The key challenges to social mobility are in employment opportunities, working conditions and the unequal distribution of wages. This aligns with the findings of Pandiella and Gabriel (2017) that labour income is the greatest contributor to inequality in Costa Rica. Across their period of analysis, it consistently accounts for more than 80% of inequality. It is also shown that inequality is driven by a large and increasing skills premium in the private sector. In Costa Rica, those in the first two income quintiles generally work in unskilled professions and it is this unequal distribution of skills across the income distribution that drives income inequality. As labour markets demand increasingly high levels of specialization and technical knowledge, this feature of the Costa Rican economy creates a vicious poverty cycle. This, in turn, hinders social mobility as it is the initial conditions of people's lives that generally determine the skill and education levels they can attain, greatly limiting social mobility

Concluding Remarks

We have focused on the political and socioeconomic effects of inequality. This

is not to say that there are not direct economic effects, such as limiting entrepreneurship due to many people being credit constrained. These factors are for discussion elsewhere.

Costa Rica and South Africa are uniquely placed countries whose current socioeconomic structures still bear the marks of their complex histories. That said, the common theme of inequality undermining good governance and rupturing the social fabric of societies is one that, we believe, is present beyond these countries. In a developing economy, an inequality trap is synonymous with a poverty trap and, therefore, should be seen as a key issue to address and not, as is sometimes argued, a 'rich country problem.' ■

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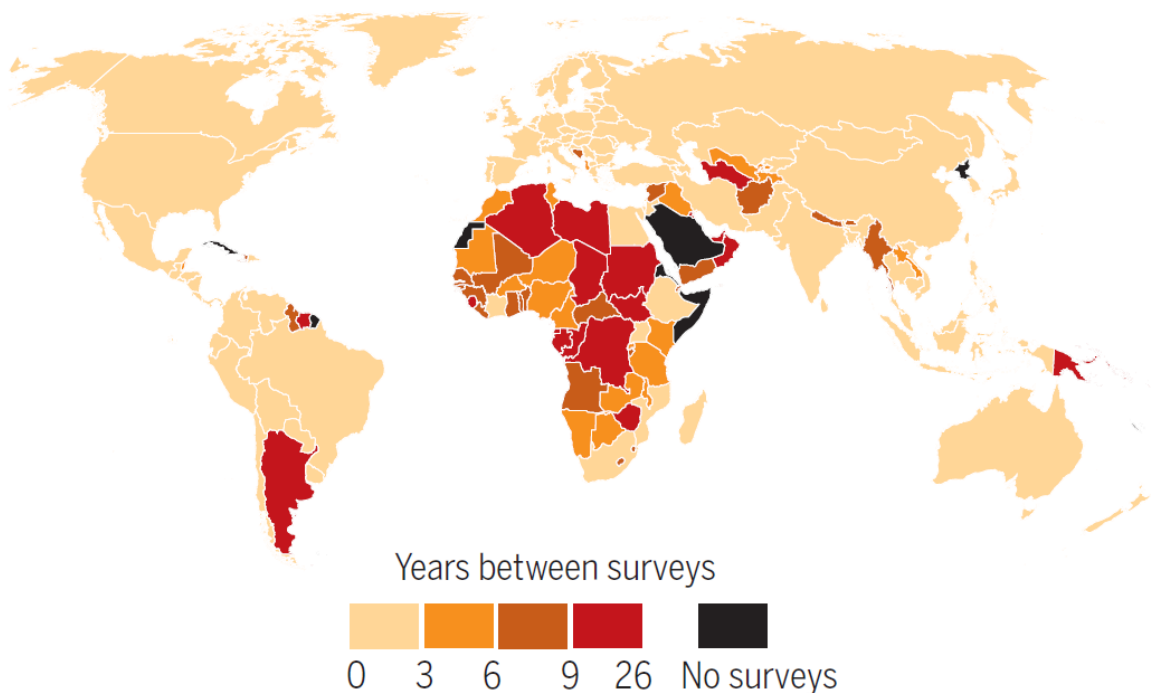
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How to measure poverty from above?

Marta Siebel

Average interval between economic surveys, 1993 to present

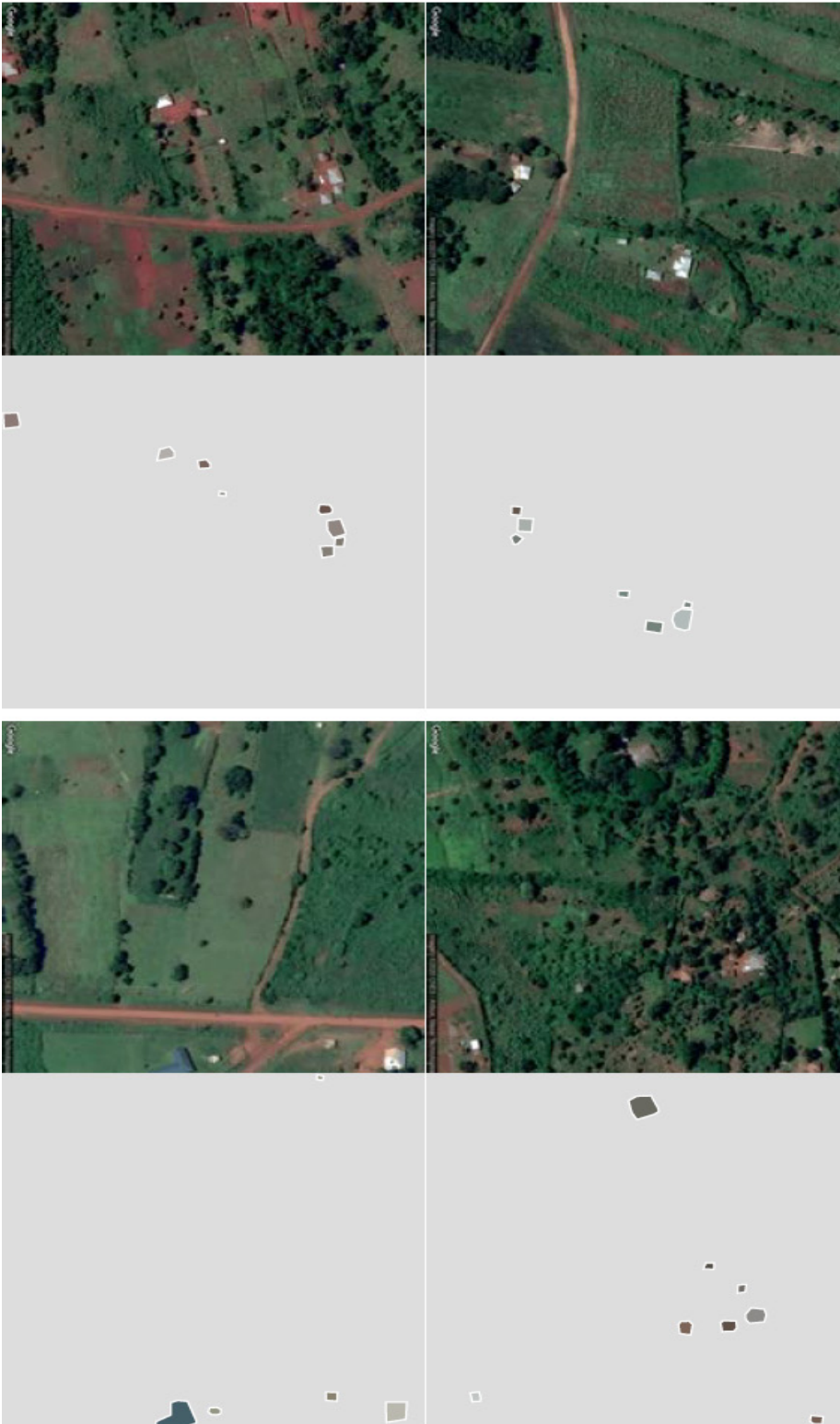


At this moment, 609,525,755 people on earth live in poverty. 51,198 escaped and 20,584 entered poverty today (<https://worldpoverty.io/headline>). But where does this data come from? The NGO World Data Lab, with their World Poverty Clock, is using data from National Income Accounts and household surveys published in the World Bank's Povcal

database (<http://iresearch.worldbank.org/PovcalNet/widget.aspx>). However, National Income Accounts, especially in developing countries, are often imprecise due to missing taxation and employment data. Also, household surveys are not conducted regularly and survey samples are often insufficient to derive reliable country-wide poverty rates. In Africa, on

average 6.5 years pass between nationally representative livelihood surveys and some countries still have no surveys at all as seen in Figure 1.

The World Data Lab accounts for this issue with a hybrid model using a mix of survey and National Accounts Data. In case household surveys are not available,



they use survey results from similar countries to construct an income distribution (Crespo Cuaresma et al., 2018, Palgrave Commun).

**At this moment,
609,525,755 people on earth live in poverty.**

Satellite imagery becomes a more and

more popular tool in closing these kinds of data gaps. First attempts to use satellite imagery to measure economic prosperity made use of nightlight data, which measure the intensity of light during the night, to detect economic activity and derive wealth from it. This data appeared to be effective to derive country-wide estimates as it correlates with GDP. However, on a more local scale, estimates perform poorly to determine welfare. Nowadays, deep learning technologies allow us to measure poverty more accurately. High resolution satellite images of locations with existing poverty data are used by image recognition

algorithms to train themselves to detect patterns of poverty. These patterns consist of the density, height and roof material of buildings, the number of cars, lengths and quality of roads or types of agriculture. The trained image recognition algorithms are then capable to measure poverty in regions without existing poverty estimates. In Figure 3, for example, the computer

Data derived from satellite images [...] can be more cost-efficient than other data collection methods

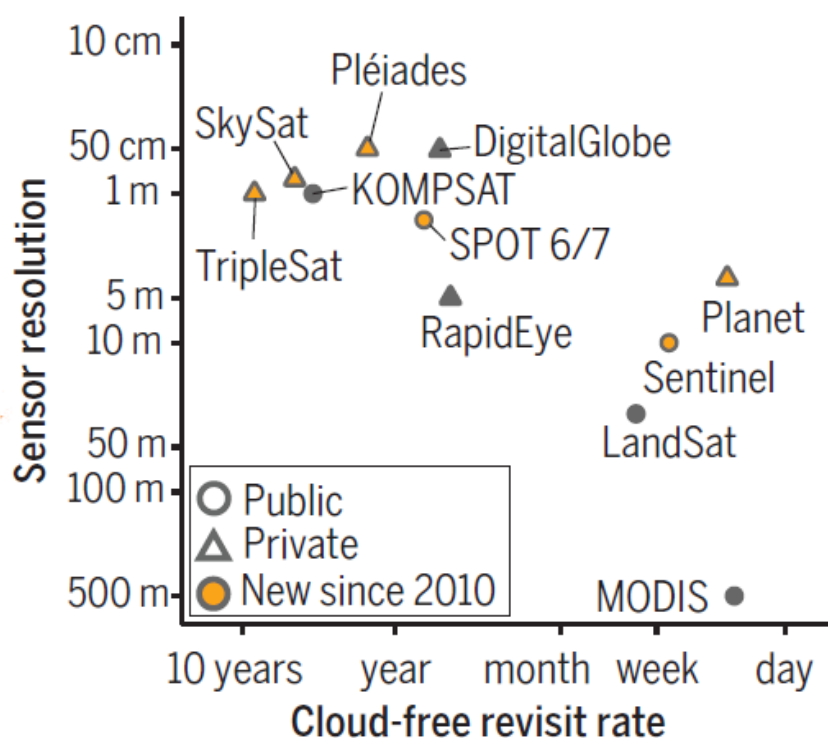
algorithm detects buildings that are outlined in white and filled with a colour from which roof quality can be derived in a next step.

Huang et al. (2021, NBER) find that estimates solely based on high resolution satellite imagery and deep learning methods perform as accurately as household surveys to evaluate anti-poverty programmes in Kenya and conclude that it presents a real inexpensive and time efficient alternative or complement to the traditional household surveys. Equally, Engstrom et al. (2017) from the World Bank Poverty and Equity Global Practice Group, find that with this methodology, almost 60% of actual poverty rates can be estimated compared to only 15% from nightlight data.

But is measuring poverty from above a real alternative to national account and household survey data? In the last decade, the number of providers from the public and private sector has kept expanding, causing an increase in the global coverage, frequency and quality. Figure 2 shows that, in 2019, images existed with a resolution of up to 50 cm with an almost daily frequency.

This and other characteristics make it an attractive data source to better inform policy decision making. Data derived from satellite images can be used in all stages of development programs or projects from design and implementation to monitoring and evaluation. Especially for evaluating long-run impacts, it can be more cost-efficient than other data collection methods. It can also be used when

Satellite resolution and revisit rate, Africa 2019



data needs to be collected retrospectively and the decision to evaluate the program hasn't been taken before or during its implementation. Furthermore, the fact that the data is remotely accessible makes it possible to access information for regions where on-site data collection is not possible due to natural disasters, conflicts or pandemics. However, as we can also see in Figure 2, the highest-resolution imagery is provided by private companies and thus still stays costly. While medium resolution satellite images provided by public entities are freely accessible, high resolution images need to be bought by picture from companies like Digital Globe or Planet, where the price depends on size and frequency of the picture. However, Huang et al. (2021, NBER) compare the cost for estimating poverty per household with satellite imagery and deep learning, and a household survey and find that the former is only a fraction of the latter (\$0.006 to \$18-300 per household).

While computing costs are included in the \$0.006, labour costs for research and development are not. Yet, the human resource requirements to process and make sense of this data are still a big barrier that hinders this tool from being applied more. Also, the cost of \$0.006 was estimated assuming that high quality training data is freely accessible. However, in

their recently published article in Science, Burke et al. (2021) highlight that nowadays the lack of local high-quality data to train and validate the image recognition algorithms is the biggest obstacle. Another limitation is that this method is restricted to measure poverty connected to built-up assets. Subjective poverty referring to an individual's personal consideration of

[...] the human resource requirements to process and make sense of [satellite] data are still a big barrier that hinders this tool from being applied more

their situation or social exclusion are not represented in the materialistic assets of the household and cannot be captured. Moreover, estimates derived from satellite images connect poverty to georeferenced places and not to individuals or families. Lastly, as the resolution of satellite images

keeps increasing, privacy issues become increasingly critical. The most advanced satellites in Orbit, like Cartosat-3, are now able to take pictures with a resolution of less than 0.5 meters, which makes it possible to identify objects like mailboxes or bicycles.

Poverty estimates from satellite images have a huge potential in amplifying ground-based data. Nevertheless, due to costs, human resource requirements and low quality of training data, satellite images and deep learning are not yet widely used to fill data gaps of nation-wide poverty estimates. So far, they are mostly used by researchers for evaluations of regional anti-poverty programs. In order to exploit the full potential of this tool, partnerships between the private sector that owns the images, researchers that have the knowledge to process and operationalize them and public institutions that can make sense of the data and derive decisions from them, are necessary. Meanwhile, public actors need to be aware of privacy issues and ensure an appropriate regulatory framework. ■

EMERGING AND DEVELOPING ECONOMIES IN A STRONG DOLLAR ENVIRONMENT

IMPLICATIONS AND THE WAY FORWARD

Tarik Imamovich

In times of great macroeconomic turbulence, it is worth considering an aspect of the international macroeconomic environment which is perhaps the one that is the most out of control of domestic policymakers in developing and emerging economies — the re-emergence of a strong US dollar. Given that, in the past several decades, superior growth performance of economies like Brazil, India, Indonesia, and others has brought millions out of poverty, it becomes increasingly important to analyse how this problem affects emerging and developing economies in the new context of the turbulent post-Covid macroeconomic environment.

We have witnessed the climb of the US dollar's exchange rate to the highest levels since 2000, bringing new macroeconomic challenges in all open economies due to its major role in international trade and finance conduct, accounting for around of 40% of export invoices and about 50% of cross border loans and international debt securities (Gopinath and Gourinchas, 2022)

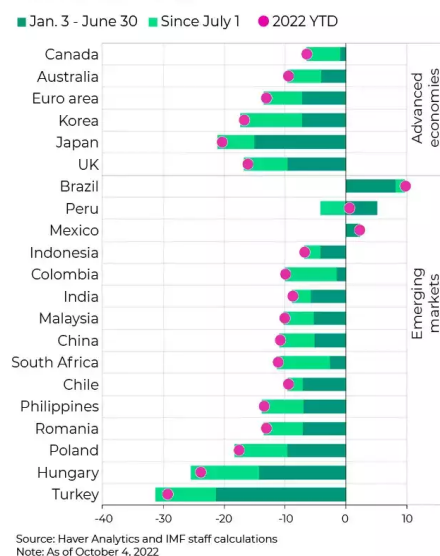
The implications

The root cause behind the mentioned trend is the traditional dollar's role as

a haven in times of heightened macroeconomic and geopolitical risk, coupled

Dollar surge

For many countries, the weakening of their currencies relative to the US dollar has made the inflation fight harder



with the FED's interest rate hiking cycle intended to combat domestic inflation in the USA. In an article published by the World Bank blog, M. Estevao points out the three main channels of transmission of such a shock to an individual developing/emerging economy — debt burden

increase, terms of trade change, and spillovers of interest rate hikes on domestic growth (Estevao, 2022).

The mechanisms of these transmission channels have been relatively well known

We have witnessed the climb of the US dollar's exchange rate to the highest levels since 2000, bringing new macroeconomic challenges in all open economies [...]

to economists for quite some time, at least in theory. However, the factors making this episode special, and thus compounding the associated risks, are the pandemic-induced increased levels of public and private dollar-denominated debt in emerging and developing markets, and the increased supply squeeze in food and

wider commodity markets, which mostly quote prices in US Dollars.

As far as increased debt burdens go, the mechanism which is at work here is well known. With the appreciation of the dollar, debt servicing by both private and public agents who hold debt in USD becomes proportionally more expen-

[...] the three main channels of transmission of such a shock to an individual developing/emerging economy — debt burden increase, terms of trade change, and spillovers of interest rate hikes on domestic growth

sive. In the sphere of public sector debt, most problems seem to be contained in the lowest income countries, adding to the vulnerability of the poorest ranks of world population. Bloomberg reports that around a quarter trillion dollars of debt is in distress globally, with countries such as Sri Lanka, Lebanon, Russia, and Zambia already being in default (Spellman, 2022). In addition, IMF's Kristalina Georgieva was quoted saying that around 60% of low-income countries are in or close to having "debt distressed" status (Wiesman, 2022). In emerging economies, we see the most risk in the region of Latin America, where the share of public debt denominated in dollars is historically higher. Nevertheless, default and distress risk in that area remains moderate for now, except in the case of Argentina and Colombia which respectively have 55% and 30% of public debt denominated in USD (Restrepo and Grittayaphong, 2021).

In the sphere of private debt, most effects will be seen in emerging economies like Indonesia and Brazil which have a considerable number of companies who optimized and steered their debt portfolios toward debt in USD, which was consistently cheap ever since the Great Financial Crisis in 2008. In this respect, this will lead to decreased profitability of existing investments and much less free funds left for new ones, all other things held equal.

On the other hand, the surge of dollar denominated prices of food and commodities in the international market, brought about a more heterogeneous impact among emerging and developing countries. For example, this brought about some relief to the countries which are net commodity exporters, such as Brazil, Mexico, and Chile, allowing their policymakers to hike interest rates more freely to keep up with the FED. Another group standing to benefit are the traditional trading partners of the USA, whose exports have now become cheaper in terms of USD purchasing power. These two groups of countries might face risks later, when output and commodity prices inevitably fall in the advanced economies as a result of recent interest rate hikes, making their output growth much more vulnerable. In contrast, developing countries like Egypt, Nigeria, and Somalia which are more dependent on food and raw material imports will face the most strain, especially when considering that they are often among the group of debt distressed economies (Cohen, 2022)

All of this begs the question what is the way forward in terms of possible policy solutions from the standpoint of various actors.

In lieu of a conclusion - policy implications and the way forward

Taking the viewpoint of the developing and emerging economies, the first line of protection for an economy from a strong dollar is an intervention in the foreign exchange market. Consequently, this year, there is a recorded a decrease in 6% of foreign exchange reserves of emerging and developing economies for the first two quarters. This measure, of course, serves only as a method to "quell fires"

With the appreciation of the dollar, debt servicing by both private and public agents who hold debt in USD becomes proportionally more expensive.

and ensure that panics do not appear in the market. In case of disbalances based on economic fundamentals, which is the

case now, the most common course of action is to follow the hiking cycle of the FED, coupled with more prudent fiscal policies and debt restructuring to reduce currency mismatches. Such a course of action seems to be the most prudent for most small open economies, given that any significant depreciations of domestic currencies drives up the prices of essential import goods such as energy, medicine and various input materials.

Unfortunately, it is, most often, the case

[...] the surge of dollar denominated prices of food and commodities in the international market, brought about a more heterogeneous impact among emerging and developing countries

that countries which are most vulnerable have the least appropriate macroeconomic tools at their disposal for dealing with this problem autonomously. In those cases, structural economic difficulties render local macroeconomic policymakers unable or politically unwilling to enact more restrictive measures in response to exchange rate stability. Thus, countries like Pakistan, Sri Lanka, and Lebanon will necessarily have to rely on external partners, namely the IMF, to provide at least a temporary solution to the problems which a strong dollar and consequential macroeconomic turbulence bring.

On the side of advanced economies, there is traditionally very little concern regarding this problem, given that domestic price stability is the main concern of their policymakers. In that respect, most help from advanced economies is expected to come indirectly, through the IMF which relies on them for a major part of its funding. The only imaginable action outside of this might come in the form of a collective intervention in the USD market, on the lines of the 1985 Plaza Accord which occurred in a similar backdrop in the international economy. However, such a measure still seems very far-fetched and might become a more real possibility if the trend of dollar's gains continues, and when those gains start causing more significant instability in advanced economies

themselves (Carson and Pollard, 2022).

[...] most help from advanced economies is expected to come indirectly, through the IMF which relies on them for a major part of its funding

A final consideration of this problem's effect in the long run remains a political one. As is often the case with major international economic fluctuations, the advent of a stronger dollar and wider macroeconomic insecurity will not remain without political consequences. We have already seen the appearance of mass popular protests in countries like Tunisia and Indonesia, and an outright government collapse in Sri Lanka. More likely than not, many more events like these will ensue on a wider scale in developing and emerging economies, and their political consequences will surely be tallied for years to come. Perhaps the most interesting question which remains to be answered in this respect, is whether we will see the appearance of China as a major player in offering debt restructuring and macroeconomic stabilization plans to distressed developing economies. Until now, it has extended funds for more long-term investments, as a part of its wider geopolitical and geoeconomic ambitions. However, it remains unclear whether there will be sufficient political will and enough internal financial stability in China for it to be able to engage in, and thus politically profit from, extending funds for the purpose of macroeconomic stabilization of third parties in distress. ■

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Climate Migration

The challenge of our decade



Alice Crolard

It is now common to wake up to yet another unprecedented climate change disaster on the news: floods in Pakistan, heat waves in Europe, wildfires in Australia, hurricanes in the United States, melting ice in Antarctica... the list goes on.

According to the Internal Displacement Monitoring Centre, since 2008, over 342 million people around the world have been forcibly displaced by floods, windstorms, earthquakes, or droughts. These movements are likely to increase in the coming decades: according to the International Federation of Red Cross and Red Crescent Societies (IFRC), the number of people affected by climate change could double by 2050. So far, the response to this challenge has been limited, and protection for those affected remains inadequate.

Way forward in terms of possible policy solutions from the standpoint of various actors.

What are the solutions?

Of course, reducing our greenhouse gas

emissions to zero as soon as possible is essential to stabilise global temperatures and limit the damage of climate change. But tackling the roots of the problem is no longer enough. We need to help the most affected populations and mitigate the consequences of climate disasters. Climate migration is the biggest challenge of the coming decades and, good news, there is much to do.

Pressing need to define the refugees

[...] The legal status of migrants forced to leave their place of residence because of climate change remains unclear

The International Organization for Migration (IOM) defines climate migration as the movement, within a State

or across an international border, of a persons or groups of persons, who are obliged to leave their habitual place of residence, or choose to do, either temporarily or permanently, predominantly for reasons of sudden or progressive change in the environment due to climate change.

Although there is a precise definition of climate migration, the legal status of migrants forced to leave their place of residence because of climate change remains unclear. Climate migrants have not yet been granted any official status or legal protection, meaning that their displacement does not trigger any access to financial grants, aids, or shelter - they find themselves in a legal void.

Principle 1 of the 1972 Declaration of the United Nations Conference on the Human Environment states that there is “a fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being”.

“Climate refugees” should no longer be just an expression used by activists to denounce the urgency of the situation, but a legal status that would allow those concerned to benefit from international recognition and, above all, assistance. The international community needs to acknowledge formally the predicament of forced climate migrants, as well as better understand the dimensions of the problem and be willing to address its consequences.

Adaptation and risk reductions

We cannot end climate change overnight, but we can act together as a society to mitigate climate catastrophes and its disastrous consequences for millions of people. Building resilience and reducing risks are the key.

Countries need to invest now in more resilient development, disaster reduction and climate adaptation to reduce people’s vulnerability to climate change. Low-income countries, such as Bangladesh, Somalia, Vietnam, or Ethiopia are the most affected by climate change. But as their cities and infrastructure systems will largely be designed in the next decades, there is a unique opportunity to build resilient systems. A report published by the

[...] greenhouse gas emitters should take an allocation of climate migrants in proportion to their historical emissions

World Bank in 2019 shows that investing in more resilient and dedicated infrastructures, such as dikes or pumping stations, is efficient and doubles the net benefits in comparison to invested costs.

Access to fundings will be needed to achieve this goal. By helping vulnerable societies develop in a more resilient way, the international community can save lives, reduce the number of people at risk, and create new, climate adapting-ways of living. It is essential that climate adaptation and disaster risk reduction become an integral part of legal policy, planning and regulatory framework.

Immigration policies in less affected countries

Another determinant of forced migration

will be immigration policies in less affected countries, in particular the OECD countries: in his paper published by the International Organization for Migration, Oli Brown argues that greenhouse gas emitters should take an allocation of climate migrants in proportion to their historical emissions. Following this argument, Bayes Ahmed, associate professor at University College London, proposed a method for taking responsibility for climate refugees, and found that Australia and the United States should each take 10% of the global share of climate refugees, followed by Canada and Saudi Arabia (9% each), South Korea (7%) and Russia, Germany and Japan (6% each). Immigration is a response to climate change, as much as a global redistributive justice.

Unfortunately, this is not the path that these countries have been taking in recent years. Around the world, nations are choosing walls. The United States have built barriers along the border with Mexico, Turkey reinforced its stone wall on the Iranian border, Europe is witnessing an unprecedented growth of radical right-wing parties in national elections. This is not the way to solve the issue of climate migration.

In 2020, the New York Times Magazine, ProPublica and the Pulitzer Center used climate and economic development data to model and predict migration over the next few decades. They showed that policy responses to both climate change and migration can lead to drastically different futures. If leaders fail to act on climate change and close their borders to migrants, food insecurity and poverty will increase. On the contrary, if societies address climate migration and build resilience, food production will be enhanced and poverty reduced, factors that could contribute to a more stable and peaceful world. ■

Conclusion

During the COP27 held last November in Egypt, the world’s least developed countries, which are also the least polluting in terms of greenhouse gases but the most affected by climate change, called on the Northern countries to take responsibility and demand compensation for their historical emissions.

Managing migration in the context of climate change represents one of the most urgent and profound current tests for

international cooperation frameworks. Climate change has a negative impact on a wide range of human rights, mainly affecting marginalised groups, and could have a cataclysmic impact in the future if ambitious actions are not taken immediately. As the IFRC stated, “there is clearly a very high cost of doing nothing. But there is no clear reason why 200 million people should be forced to pay it in 2050”.

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Environmental vs Ecological Economics

Part II: Scarcity, Technology & Growth

by Peter Kamal

Disclaimer: This is the second part in an article series on the differences between conventional environmental economics, and progressive ecological/biodiversity economics. To read the introduction, look back to the last issue. This issue focuses on the different conceptions of scarcity, technology, and growth between the two approaches.

Scarcity is the main concept underlying economic reasoning. Actors, be they firms, households, or any other unit, maximize their utility under resource constraints. These resource con-

straints are often monetary in economics, but the idea of optimizing utility under constraints extends to natural resources easily. For fossil fuels, it is somewhat clear that they are finite, and that is why the field of resource economics was created for. Other resources have more fuzzy limits.



straints are often monetary in economics, but the idea of optimizing utility under constraints extends to natural resources easily. For fossil fuels, it is somewhat clear that they are finite, and that is why the field of resource economics was created for. Other resources have more fuzzy limits.

On a macroeconomic level, resources are used for economic growth. To secure growth, the availability of critical resources has to be guaranteed, and if not, technology must help overcome those

shortages. This technological positivism goes so far that any planetary boundaries seem not to matter for conventional economists studying growth. The point of this article is to explore how different strands of economics treat this resource scarcity and its relation to growth through technology.

The classic macroeconomic model of growth is the Solow (1956) model. Economic output is a function of labor and capital. Labor is modified by technology to result in effective labor, i.e. the equivalent of a worker with technology in “basic worker without technology” units.

Labor grows at rate n , technology at rate g . If normalized by effective labor, we can represent output as a function of only capital per unit of effective labor. Solving this model yields a stable equilibrium of capital stock per unit of effective labor. This capital stock secures that actual investment (i.e. aggregate savings) matches needed investment due to population growth, technological changes or material depreciation. Note that for per capita capital stock to be stable, aggregate capital must grow at rate $(n+g)$ to keep the

proportion with effective labor constant. This is why stable per capita capital implies growth at the economy level. There are two problems with this model: (i) The growth rates for both labor and technology are exponential, which is – depending on your view of things – at least questionable. In particular for labor, this assumption only holds for a limited period of time looking forward. (ii) The model does not take into account the limitations imposed by resources, in particular finite natural resources. These problems are as glaring as they are well examined in the literature, and the rest of the article will give you an overview of a conventional solution by Nordhaus (1992) and a more progressive solution by Dasgupta (2021). Nordhaus (1992) extends the Solow model by adding two more factors to the original capital and effective labor: (i) the resources used for production, and (ii) the amount of land mobilized for production. The assumptions are that resources decline exponentially at rate b , and that available land is constant. Nordhaus then compares this new extended model to a historical reference that assumes resources and land grow at the population growth rate (as it was somewhat sensible to assume in a society dominated by subsistence agriculture). Using empirical estimates based on income data, he finds that the deficit of growth of the new model compared to the historical reference is 0.25%. However, as income per worker has increased by way more than 0.25% since the historical reference, he concludes that resources and land use would have to undergo major changes to have a detrimental effect on worker conditions. Growth, therefore, is not bounded by resource availability, just slowed. The approach by Dasgupta (2021) ends up with a similarly looking aggregate model.

Output is a function of produced capital, human capital (labor), extracted natural resources, and productivity/technology. The only addition is a term for the regulating and maintaining services that the biosphere provides. To understand the impact of this addition, we have to delve deeper into the underlying assumptions. First, what are these services that the biosphere provides? In the ecosystem services framework, this is the portion of services that on a small scale (ecosystem) to a global scale (biosphere) regulate the flow of nutrients, energy and many other things. This could be water purification in a stream on a local scale and the carbon cycle on a global scale.

Second, what role do these services play in the model? To understand this, we must understand what Dasgupta calls the Impact Equality, which states that aggregate global demand for biosphere services must equal aggregate supply in the long run to ensure sustainability.

Aggregate supply is conceptualized as the regenerative capacity of the biosphere, i.e. a function of the stock of biosphere over time. A good example of regenerative capacity is a fish population in a lake. Within certain boundaries of fishing by humans and the natural interactions between predators and prey, this fish population will regenerate to an equilibrium level after any positive or negative shock. However, there is a threshold value of fish, below which that regenerative capacity stops and competitors take over – the population ceases to exist. The same holds for the regenerative capacity of the biosphere and has been formalized by the idea of planetary boundaries (Rockström et al., 2009). In this paper, the authors define safe operating zones for the major biospheric processes that govern our planet's functioning. See the graphic

“Output and thus the global economy are ultimately bounded by the regenerative capacity of the biosphere.”

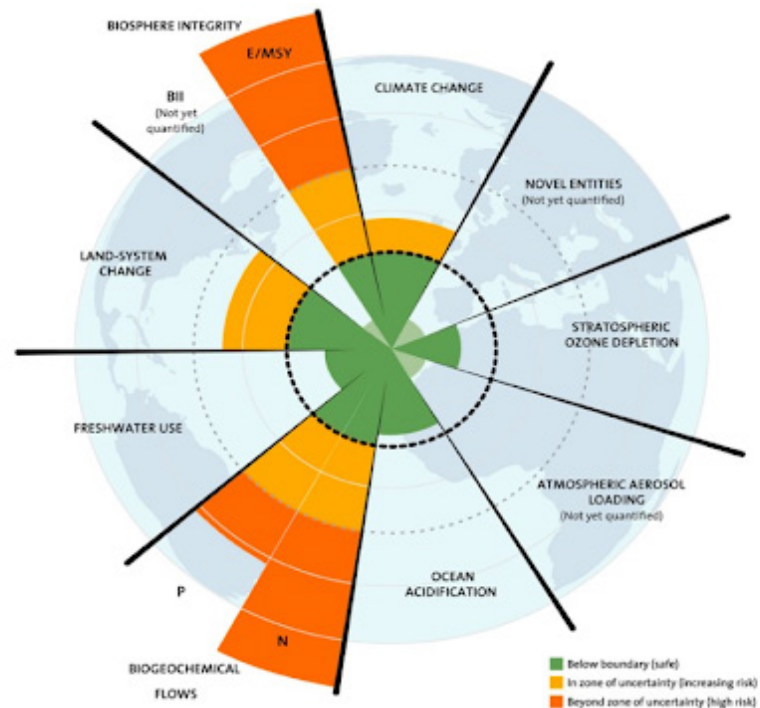
from the Dasgupta Report below for a visualization of the processes and our overshoots. If we veer outside of those zones, we cross the threshold where the biosphere cannot regenerate anymore,

and the global system breaks down. Therefore, regenerative capacity is bounded, and thus also aggregate supply of biosphere services.

Aggregate global demand in this framework is equal to impact, or the well-known ecological footprint. It is a function of the population size and their income needs, mediated by the efficiency with which the biosphere can translate our demands into GDP, and, importantly, the impact of our waste on the biosphere. Demand could therefore theoretically be dampened by controlling population

planetary boundaries, shows that even technology is limited by the regenerative capacity of the biosphere, and therefore economic growth is bounded. To ignore that is to ignore a bulk of scientific evidence that points towards system collapse if we stretch the planetary boundaries.

To follow up on this idea of the bounded economy, the next and last article will explore notions of intergenerational equity and post-growth. This article was fairly technical, and I thank you for staying around. ■



J. Lokrantz/Azote based on Steffen et al. 2015

size and improving the efficiency of our impacts on the biosphere through technological and institutional change. Notice, however, that in that conception demand also depends on the capacity of the biosphere to recycle waste, which is bounded like any other natural process. The assumption that technological and institutional change could enable overcoming this bound would assume that it is possible to “free ourselves of the biosphere’s services entirely” (Dasgupta Report, p.141), which it is not possible following the evidence from Rockström et al. (2009). Therefore, output and thus the global economy are ultimately bounded by the regenerative capacity of the biosphere.

Comparing the Nordhaus model to the Dasgupta model, we can see that the Nordhaus model still models a (mitigated) growth path, exactly because it assumes that technological development is not a function of biospheric services. The Dasgupta model, building on the idea of

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Internship Report

Naemi Riess

Where did you do your internship and what were your tasks?

I did my internship at the DG COMP (European Commission) which is responsible for competition policy and enforcing EU Competition law. In particular, I was working in the Chief Economist Team which specializes in economic analysis. During my time as intern I could contribute to one antitrust and one merger case. My tasks primarily included to conduct data cleaning and analysis of firm-level data and to present the economic methods and results to the case team members and the Chief Economist Team. The analysis conducted was usually needed for eventually making a decision on a case, for example the market shares of merging parties. Towards the end I also drafted sections describing the economic analysis and its results in the decision of the Commission regarding the merger application. Trainees at the Commission can also attend many events such as academic conferences or visits of EU officials.

How did your studies at TSE help you during your internship?

My M1 studies at TSE prepared me very well for the tasks I was facing during my internship. For example, I could apply data analysis skills such as the use of the statistical software's Stata or R which we covered in Applied Econometrics or Empirical Industrial Organization. At the beginning of a new exercise a good understanding and intuition of an economic model had to be established, therefore, I could benefit a lot from the Intermediate econometrics, Game theory and Industrial organization classes. At TSE we frequently encountered project work, deadlines and working in international teams. I think these experiences were very important during my internship as we were working in large case teams and communication was important for a successful finishing of an analyses or reports.

How did you get your internship? What would be your advice for students looking for a similar internship?

The European Commission has two different possibilities for an internship. The Blue book traineeship is the official trainee



program within the European Commission. It lasts 5 months and has two starting dates throughout a year (April and October). The application process is quite time-intensive and starts ca. 10 months before the starting date.

Alternatively, one can apply to an atypical traineeship which is more flexible in duration and starting date. To apply to such an internship, students should look for the Human Resources' email address which can be found at the official websites from DG Comp website in the "Visitor scheme" section. Usually, they require the typical application material such as a CV, motivation letter and transcripts. Whilst the tasks conducted as Blue book or atypical trainee are the same they differ in compensation (atypical internship is unpaid).

Internship Report

Marta Siebel

Where did you do your internship and what were your tasks?

I did my internship at ADE in Louvain la Neuve close to Brussels, Belgium. I worked with the Impact Evaluation department and had a junior evaluator as mentor that also did her Master in Public Policy and Development at TSE two years ago. During the four months of my internship I was mainly involved in two projects where I had my own tasks and responsibilities. The first one was a strategic evaluation for a policy of the World Food Programme of the United Nations. I did the stakeholder analysis and contributed to the Theory of Change and other minor tasks for the Interception Report. I also attended meetings of my colleague and other team members during the country visit in Mali. The second project was an impact evaluation of a programme of the European Commission aiming at protecting forest ecosystems and biodiversity in Central Africa. My responsibility was the secondary data extraction and analysis to measure outcomes like population and road density, land cover change, deforestation, access to healthcare and nightlight in zones around the

national parks being part of the programme. With the help of my colleague, I extracted this and other descriptive data from satellite imagery to conduct a clustering of the national parks and compare outcomes. During my time at ADE I also held two presentations to my colleagues about how to use Satellite Imagery in Impact Evaluations and one about K-means clustering and my application of it in the secondary data analysis of the impact evaluation for forest protection.

How did your studies at TSE help you during your internship?

The M1 at TSE helped me insofar that I was very comfortable using STATA and drafting texts in English. I didn't use any econometric methods or other models we learnt during the year but it was much easier for me after the year to face difficult tasks and tackle them in a structured and efficient manner. I was more motivated and had the courage to try something new and learn to work with softwares like QGIS and Google Earth Engine to extract and process data from satellite imagery.

How did you get your internship? What would be your advice for students looking for a similar internship?

I got to know ADE at the Business Networking Day and had a very nice conversation with the Junior Evaluator that later also became my mentor. I handed them my CV, sent my complete application afterwards and then completed two interviews with them. I suggest other students come to the BND with your CV printed so you can hand it out to the company. Also, it would be good to come prepared so that you know which companies you want to talk to, what they do and what you want to know from them. But even if you're not prepared, just go and have the courage to talk to them. For the interview process the Professional Development course was helpful in some ways. Be prepared for the interview so that your answers will be short and on point, which makes you seem more self-confident and shows that you know what you want. But also listen to yourself and be natural and spontaneous during the contact with the company. Other than that, I suggest you use your network and get in contact with people on LinkedIn that do stuff you like, talk to your classmates, maybe they have an interesting contact from their last internship and never be shy to text or even call people when you have questions.



Internship Report **Léa Redlinger**

Où as-tu fait ton stage et quelles étaient tes missions ?

J'ai effectué mon stage de fin de Master 1 au siège du Crédit Agricole de Toulouse en tant que Data Scientist. Les sujets principaux de mon stage étaient l'Open Data et l'étude des données géospatiales. Ces deux sujets sont plutôt ouverts et innovants



dans le traitement des données. Une première partie de mon stage consistait alors à faire de la recherche sur ces thèmes. L'avantage de cette ouverture est qu'elle m'a permis une certaine liberté dans l'orientation de mon stage et l'équipe était toujours

très à l'écoute des nouvelles idées. Plus précisément, sur le thème des données géospatiales, j'ai pu mettre en place un algorithme de reconnaissance textuelle afin de « nettoyer » les adresses de notre système. En effet, ces dernières contiennent souvent des abréviations, des fautes de frappes, etc. qu'il faut corriger afin de pouvoir les uniformiser et mieux les étudier par la suite. Avec les adresses disponibles en Open Data au niveau national, il est possible de construire des algorithmes pour les rapprocher des nôtres et donc garder la version « propre » de l'adresse.

Comment tes études à TSE ont-elles pu t'être utiles durant ton stage ?

Ma première année de master m'a surtout été utile pour comprendre la mission de chacun de mes collègues au sein du pôle data. Mes études ont donc principalement facilité et accéléré mon orientation. Elles m'ont aussi fourni les bases pour pouvoir utiliser les différents logiciels de code et pour pouvoir traiter des données. Néanmoins, j'ai énormément appris « sur le tas » et progressé dans les différentes compétences enseignées à l'école. Je pense que le stage m'a été nécessaire pour avoir une idée plus concrète et moins théorique de ce qu'est la data science. Avec du recul, je pense que la deuxième année de master est beaucoup plus importante pour acquérir des connaissances qui nous seront utiles dans le monde professionnel. En effet, cette dernière est plus appliquée que la première année de master.

Comment as-tu trouvé ton stage ? Quels seraient tes conseils pour des étudiants à la recherche d'un stage similaire ?

J'ai eu la chance de trouver mon stage très tôt l'année dernière en partie grâce à une connaissance au sein du groupe Crédit Agricole. Je n'ai donc pas vraiment de conseil à part qu'il ne faut pas hésiter à solliciter son réseau, cela peut beaucoup aider pour trouver un stage. Je dirai enfin qu'être honnête lors de l'entretien et de ne pas trop en faire trop peut jouer en votre faveur.

Internship Report

Where did you do your internship and what were your tasks?

After doing the M1 - International Track, I was accepted at E.CA Economics in the Brussels office. The company is a competition economics consultancy involved in European regulation projects. The first days were a bit tough since it was my first professional experience, so I was a bit confused with the methodology and the different processes used, but I got used to them very soon. From the beginning I was involved in a project for the European Commission related to transports. In my daily routine I worked a lot with data, I had to clean and prepare data that we received from different institutions and clients. I also had to provide summary statistics and process the data. Once we obtained some results, I presented them to my team in internal meetings and we discussed the possible improvements and how we could carry on with the project. Beyond working with data I also found very interesting the process of reporting the results that we obtained. This is something that I struggled a lot with, since I was not very used to doing it in the economics faculty.

How did your studies at TSE help you during your internship?

My knowledge from the Bachelor and my Master were fundamental for my internship. Since I had to deal with data continuously, it was necessary to have a solid understanding of statistics and software skills. The program that I mainly used was Stata, but I also used RStudio for some visual presentations and I learnt to use other programs such as ArcGIS. I also think that most of the econometric classes can be useful for this sector. I did not use econometric models every day, but sometimes the project needed some theory, so it was then when I realised how valuable econometrics can be in the real world. Other subjects related to microeconomics were also helpful since they gave me the notions of how markets work, so you can better understand the data that you are analysing.

How did you get your internship? What would be your advice for students looking for a similar internship?

During January I was looking for an internship and I looked at the TSE Alumni website every day. One day I saw this job offer

Abel Real Ambrinos

and I decided to apply although I was not sure that I would be accepted. If, like me, you do not have very clear in which field you want to specialise in the future, my advice would be to apply to different companies that work in different fields. In an internship of some months you have the possibility to learn how a certain sector works, having this experience you can choose if you want



to work longer there or either quit and prove another thing. This is one of the biggest advantages of internships. When applying to an internship I do think that it is very important to have a good CV and cover letter. For that reason, I think that the classes of Professional Development that TSE provided last year were very useful. Moreover, it is vital to prepare for the interview with the company, you should not only prepare the economic related questions but also other questions related with your aspirations and interests.

Internship Report

Where did you do your internship and what were your tasks?

I was an intern at RBB, in their Paris office. RBB is a specialized firm in economic consulting providing their services in several areas such as mergers, damages, litigations and more. During my 5-month internship I mainly worked on a merger case which involved two French actors present in different markets across several continents. My day-to-day tasks could vary every week, but I was mainly involved in the data treatment and analysis tasks. The client provided us with different data sets that needed to be cleaned to prepare several economic analyses. The analyses could go from a basic level (for example computation of market shares) to more complex situations (local competition analysis

Xavier Bonilla

with geographic data). More rarely, I was also asked to contact the client or to prepare drafts for the lawyers working on the case.

How did your studies at TSE help you during your internship?

I would say TSE was an asset even during the application procedure. The school was known by the economists working at RBB and they were present at the BND. During the interview, it was mainly my Industrial Organization course which gave me the necessary tools to succeed on the study case. Once I joined RBB, and since I was doing a lot of data cleaning and treatment, my tasks were mostly done on STATA or Excel. Therefore, the courses at TSE involving these two softwares, such as Program

Evaluation and Applied Econometrics, were very helpful too. Finally, the working methods that I developed at TSE during my final year of bachelor and first year of master helped me to easily adapt to the work rhythm in an area such as economic consulting, where you need to be very clear and concise when presenting your work to clients or your team managers.

How did you get your internship? What would be your advice for students looking for a similar internship?

I got to know RBB Economics (and other consulting firms) during my L3 BND. However, I only applied to intern positions when I entered the M1. After filling an online application, the HR team from RBB Economics contacted me showing their interest in having an internship with senior economists from their office. A couple of weeks after the interview, which involved a 1-hour study case, I got an offer. I would recommend the students to not take too long when applying to economic consulting firms because they tend to receive a lot of applications early. These will often require sending your transcripts therefore having good grades in courses such as Econometrics, IO or Microeconomics will always be a plus. However, it is also very important to show your interest in microeconomics/industrial organization and why you are motivated to join the team. Almost every employee working at these firms are on LinkedIn, and there are a lot of ancient TSE students working at these firms. Don't hesitate to go out there and contact them! They will, in general, be very helpful and will be happy to answer your questions (and even help you prepare the study cases!).



M1 Thesis Report

What was your master thesis about?

My Master 1 thesis was about the impact of data on competition, and its consequences on market structure on welfare. In fact, with cloud-based connectivity, advanced search algorithms, and an ever-increasing proportion of the population connected to the internet, data is a new source of competitive advantage. My thesis was a critical literature review that compares different IO models that incorporate data, and provides further analyses on welfare consequences and data-sharing policies.

How did your studies at TSE help you write the thesis?

My industrial organisation course helped a lot in writing the thesis. I needed to know the general theory of IO before introducing data into the mix. For example, to see how data can act as a barrier to entry in a market, I had to rely on the models of entry and exit. Moreover, understanding the concepts of consumer and total welfare helped into analysing the consequences of data in my thesis. Furthermore, in the Applied Econometrics class, we had to deliver a research paper in March. This trained me well to write a research paper: format, outline, citations, references...

How did you find a topic? What would be your advice for students writing a master thesis?

I did not find a topic immediately. However, since I have an appetite for industrial organisation, I immediately contacted my Industrial Organization professor to be my thesis supervisor. I wanted to benefit from his research in data-driven markets in order to apply IO theory to a new exciting topic, which is how data affects competition. In fact, I did not know my exact thesis question at the beginning since there are many interesting questions. Fortunately, my advisor guided me through the process,

Moustapha Ajram

and after several weeks of reading papers and research, I finally formulated a concise question and started the process of writing the thesis. My advice for M1 students is to choose an economic field they are very passionate about because hours long of reading is not easy. They should not worry if they do not have a specific research question in mind: their advisors will gladly orient them towards finding it.



