### Advantage 1 – Inequality

#### Advantage 1 is inequality:

#### Strikes in Brazil are increasing, but they get shut down before they become effective

Castanheira 11/12 [(Tomas, a leading member of the Socialist Equality Group, which is fighting to build a Brazilian section of the International Committee of the Fourth International. He gave these remarks to the 2021 International May Day Online Rally held by the World Socialist Web Site and the ICFI on May 1.) “Brutal repression against striking public employees in São Paulo, Brazil” World Socialist Web Site, 11/12/21. https://www.wsws.org/en/articles/2021/11/13/braz-n13.html] RR

On Wednesday afternoon, teachers and municipal workers in São Paulo faced violent repression by the police as they protested against a City Council vote on a “pension reform” that dramatically slashes their pensions.

The area in front of the City Council building was turned into a battlefield, with the police firing a barrage of tear gas canisters and rubber bullets at the thousands of workers gathered there. Several were wounded by the gunfire, and one worker fractured her foot, remaining on the ground for hours without medical care as tear gas bombs landed by her side. The councillors proceeded with their session, which extended into the early morning hours, when they passed the criminal bill.

Municipal workers had been on strike since October 15 against the austerity measures introduced by Mayor Ricardo Nunes of the Brazilian Democratic Movement (MDB). As soon as the vote ended, “at midnight and forty minutes,” declared SINPEEM, the largest union of municipal teachers, the unions declared the strike over.

This was the second strike this year by São Paulo’s municipal educators, the largest section of public service workers. In February, they struck for four months against the unsafe reopening of schools. The large support for the new strike movement, which gathered tens of thousands in several demonstrations over the last month, is an expression of the growing opposition of the working class to the intolerable conditions being imposed by capitalism.

In the last months, in addition to public employees in São Paulo, workers at General Motors in São Caetano do Sul went on strike against the company’s proposed contract and rejected the agreement presented by the union, which buried the strike against the will of the workers. More recently, truck drivers held a strike in protest over the increase in fuel prices that affected the operations of Brazil’s largest port in the city of Santos, on São Paulo’s coast. In the south of the country they were joined by demonstrations of app delivery and oil workers.

The living standards of Brazilian workers have been seriously affected in the last two years. Brazil and the entire Latin American region were hit by the COVID-19 pandemic while already in the midst of a prolonged economic crisis, which has severely deepened. Unemployment levels have reached historic highs, more than 20 million have been thrown below the poverty line, and hunger has returned as a widespread social issue. Brazil’s working families struggle to make ends meet in the face of rampant inflation that has already reached 10.67 percent over the past 12 months.

Economic desperation is compounded by the catastrophic results of the COVID-19 pandemic policies of fascistic President Jair Bolsonaro and the capitalist ruling class as a whole. The country already has more than 610,000 recorded deaths from the coronavirus and continues to record about 230 deaths daily, with significant levels of under-reporting. But across the country, local governments of all political parties are promoting an end to minimal mitigation measures, including an end to mask mandates in public places and the imposition of mandatory face-to-face education for all children.

As the WSWS reported, there was a widespread revolt against these inhumane conditions imposed by Brazil’s ruling class on the part of São Paulo’s municipal workers. Their anger was even greater in the face of the insistent and voracious attacks by the São Paulo City Hall and the endless betrayals by the unions that claim to represent them.

Workers have been fighting attempts to scrap their pensions since at least 2016, when a proposed pension reform was presented by then-Mayor Fernando Haddad of the Workers Party (PT). The attacks were intensified by his successor, João Doria of the Brazilian Social Democracy Party (PSDB), now governor of São Paulo, who brought the pension reform known as “ Sampaprev ” to a vote in March 2018. Public employees responded with a strike and massive street demonstrations, which led to the postponement of the vote on the bill. At that time, the unions called for a “suspension” of the strike, knowing that sooner or later the bill would be brought to a vote again.

The lifelong president of the SINPEEM union, Claudio Fonseca of the Citizenship party, a successor to the Stalinist Communist Party, was then a city councillor. The unions waited for Fonseca’s colleagues in the Council to convene, amid the 2018 Christmas celebrations, a new session to approve Sampaprev to call for new demonstrations. Just like this week, the public employees were barbarically repressed while the project was being approved by the councillors. Amid a rebellious mood among the workers, the unions held an assembly that voted to call a strike at the beginning of the 2019 school year.

The 2019 strike, which fought for the repeal of the recently approved pension reform, once again assumed massive proportions and was ended in a rigged vote by SINPEEM and its allies, who trampled on the decision of the majority of workers who voted to continue the movement. The same scam was applied by the unions in the strike against the unsafe reopening of schools, this time in an online meeting.

After increasing the retirement contribution rates for active employees in 2018, thus eroding their salaries, the MDB government extended the attack to already retired employees, who will have 14 percent of benefits that exceed the minimum wage ripped off. The unions, for their part, repeated their sordid strategy to disorient the workers. They subjected the powerful force of more than 100,000 São Paulo public employees to the powerlessness of the “allied” PT and PSOL councillors to reverse the vote.

The failure of this strategy was demonstrated immediately, when the entire PT caucus voted in favor of one of the bills that made up Mayor Ricardo Nunes’s austerity package. The justification of the PT councillors was that the bill would be approved anyway, and they advanced its approval to discuss mitigating amendments. In reality, the Workers Party had already carried out attacks of the same character against the pensions of public employees in the states they rule, such as Ceará and Bahia.

Tired of these theatrics and recognizing the impotence of these methods to respond to the attacks of the capitalist state, many workers talked about radicalizing their struggle, with actions ranging from blocking the city streets to occupying the City Council building to prevent the vote. This mood was definitely present in Wednesday’s demonstration.

As the beginning of the session approached, tensions grew between the workers and the shock troops. Demonstrators threw eggs and other harmless objects at the police, who promptly started firing tear gas grenades. The response of the union officials, perched on the top of sound trucks, was to immediately denounce workers opposed to the union’s capitulation as “divisive” and “infiltrators” and spread lies that people with “backpacks full of bombs” had been seen among the crowd.

SINPEEM’s directors claimed that the police, ready to savagely repress the workers, were there “working” and that they were their allies, since the police would also be harmed by the austerity measures. The president of SEDIN (Union of Childhood Educators), Claudete Alves of the PT, on the other hand, declared that confronting the police would mean using “fascist methods” that would equate the workers with far-right supporters of President Bolsonaro. Fonseca then stated that “the last thing we need today is to invade the City Council building,” since “our goal is to convince the councillors” to change their vote.

These fraudulent and deeply reactionary arguments reveal the class character of the unions. Having degenerated decades ago, they have turned into empty bureaucratic husks that support a privileged bureaucracy opposed to workers’ interests. They are not only rabid opponents of socialism but of any form of class struggle. Their real role is that of policemen of the working-class movement, and therefore they identify with and respect the “work” of the shock troops.

The mood of the workers who sought to radicalize their struggle and break the straitjacket imposed by the unions is entirely legitimate. However, these goals will not be achieved by simply changing the tactics of struggle. Workers need to break politically with the unions and the pseudo-leftist parties that seek to submit them to the capitalist state.

They must fight for the mobilization of an independent working-class movement, unified internationally. Workers willing to take up this struggle should immediately contact the Rank-and-File Committee for Safe Education in Brazil and set up in their own workplace bodies for the direct representation of rank-and-file workers, independent of the unions. This struggle is inseparable from the building of a truly revolutionary internationalist leadership within the working class, a Brazilian section of the International Committee of the Fourth International.

#### Income inequality in Brazil destroys potential for economic growth

Tornaghi 7/19 [(Cecilia, managing editor at AQ) “Inequality Is Brazil’s Achilles Heel,” Americas Quarterly, 7/19/21. https://www.americasquarterly.org/article/inequality-is-brazils-achilles-heel/] RR

Brazil’s social gap, which had seemed almost bridgeable in the 2010s, is now a widening fault line that threatens the country’s potential for growth unless long-term structural and educational reforms are undertaken.

The pandemic wreaked havoc on the lives of the world’s poor, turning a bad situation worse. For the rich across the globe the story was different. And in Brazil, the country that already boasted the title of the most unequal in Latin America, the World Bank’s Gini coefficient measuring inequality reached its highest number on record, 0.674, in the first quarter of 2021.

While earnings for the poorest 40% shrunk by a third in 2020, the top 10% of earners lost just 3% of their income. In the meantime, the stock market hit record highs, and commodity prices drove up measures of economic growth.

“It is a paradox,” said Marcelo Nery, director of the Center for Social Policies at the Fundação Getúlio Vargas, a Brazilian think tank and higher education institution. “GDP was better than expected, the currency appreciated, the stock market is up. Even formal job creation has improved.”

Only these indicators hide deeper problems. “Globally, we see investors’ risk appetite coming back, while investing is also getting cheaper in Brazil, bringing more people to capital markets,” said Laura Karpuska, an economics professor at FGV-São Paulo. “But the economic fundamentals have been worsening, and markedly so.”

A milder-than expected 4.1% contraction in GDP in 2020 was followed by a 1.2% increase in the first quarter of 2021 (comparing to the previous quarter), bringing Brazil’s economy back to where it was in 2016 — at the bottom of a deep recession. Unemployment is at a record high of 14.7%, and nearly 20 million Brazilians can’t find work or have given up looking. Even informal work is in short supply as COVID continues to spread across the country.

“The bulk of low-income jobs are in high-contact services, where we have yet to see a recovery,” said Otaviano Canuto, a former executive director at the World Bank and the IMF. “And there is a risk that changes in behavior, such as entertaining at home, could last much longer than the pandemic.”

Much of the optimism in Brazilian capital markets and in macroeconomic projections is being propelled by the agricultural and mining sectors. According to CEPEA, a research institute, the agribusiness sector grew 24% in 2020, and now represents slightly over a quarter of Brazil’s GDP. Brazilian exports of crops and meat totaled $100 billion last year, while mining exports increased by 31%.

But experts warn that the agroindustry does not have a multiplying effect on the economy as a whole. Commodity production is not labor intensive, and the more job-rich manufacturing sector has been shrinking since 2009. Meanwhile, inflation is on the rise, driving down the debt-to-GDP ratio — a measure observed by financial investors — but exacting a toll on consumers, especially the poor.

Emergency cash transfers of about $100, authorized by President Jair Bolsonaro’s administration, helped informal workers and the poor navigate the COVID-19 crisis—but hope evaporated when, despite the still-raging pandemic, the payments were discontinued at the end of 2020.

“We saw poverty levels fall by half last year, to 4.5%,” said Nery, “only to triple after the transfers stopped.”

By March 2021, 16% of Brazilians were at or below the poverty line. “We were generous, but not wise,” said Nery. “We did not prioritize testing or vaccines, and basically dismissed education altogether.”

The government’s spending on transfer programs reflects, for Nery, a predictable pattern in the lead-up to presidential elections. “Poverty numbers always fall, followed by a rapid increase,” said Nery, adding that the risk now is government attempting “grandiose solutions beyond our fiscal capacity.”

The diverging realities in the Brazilian economy—improving macroeconomic numbers and income at the top while more Brazilians fall into low-income classifications, including extreme poverty—are compromising future growth potential. “The multidimensional reality of this gap in income, wealth, access and representation is a major cause of our existing vulnerabilities,” said Karpuska.

Inequality has even made an appearance on Brazil’s happiness index, which suffered the largest drop between 2019 and 2020 in a comparative study of 40 countries around the world — pushed by a sharp decrease of wellbeing among the poor.

Today, even the IMF warns that inequality severely impacts long-term growth and economic stability. “There is a direct link between masses that are able to consume and economic growth,” said Canuto.

Inequality’s social cost

Social gaps breed social unrest, as Chile and Colombia can attest. They also rob countries of the creative and productive potential of citizens that is a vital source of future wealth.

“Less human capital will mean less productivity and capacity to grow without triggering inflation,” said Karpuska. Future discrepancies are also likely to get a boost from pandemic-related school closings and education budget cuts, which primarily affected poor children. The percentage of young Brazilians neither working nor studying jumped from 20% at the start of the decade to 29% during the pandemic. Experts say that this pandemic generation, deprived of the benefits of education, will bring down productivity and impact the economy as a whole.

#### Strikes are key to strengthening unions and increasing the minimum wage

Boito et al 11 [(Armando, is Professor at the State University of Campinas, Brazil. He is author of several books on Marxist political theory and Brazilian politics. He is editor of the Brazilian journal Critica Marxista.) (Paula Marcelino, Department of Sociology in São Paulo.) (Laurence Hallewell, Portuguese Literature educator.) “Decline in Unionism? An Analysis of the New Wave of Strikes in Brazil,” JSTOR, September 2011. https://www.jstor.org/stable/pdf/23060121.pdf?refreqid=excelsior%3Ac90e15c12fee1b9a485edf8dfd02f696. Graphs omitted] RR

At least since 2004, Brazil has been seeing renewed union activity. At the bottom, the frequency of strikes has been rather high, and the vast majority of strikes have been achieving real wage increases. At the top, political contro versy has been stirred up by the emergence of new union federations.3 This recovery of union activity may be taken as an indication of the vitality of union ism as a social movement: striking is not the only important and pertinent activity of unions, but it certainly is one of the most drastic and the one that gives them the most political and social visibility.

Strikes tend to occur in cycles, with phases of growth, stabilization, and decline. These cycles present their own characteristic profiles and determining factors. The profile of the strikes within each cycle and the factors that shape it are, in most cases, related. One cycle may be characterized by mass strikes, another by local strikes; one may attain unusually high numbers, while another may follow a much more modest pattern; this one could be a politically motivated move against a dictatorial government, that one could be reacting to the ero sion of the purchasing value of wages through a high rate of monetary inflation in the economy.

The cycle of strikes that occurred in Brazil between 1978 and 1992, for example, reached unusually high rates of activity (number of strikes, number of hours lost, total and average number of strikers, etc.) and may be considered quite exceptional (Noronha, Gebrin, and Elias Jr., 1998).5 It was similar to the one in Spain during the same period. Brazil and Spain were countries sharing unusual conditions, and they had both become world champions, so to speak, of strike activity. Both had just emerged from a period of strong and prolonged capitalist growth under dictatorial regimes in crisis that were suffering a return to high inflation rates. In this situation, the working classes were able to broaden and reenergize their union and party organizations, and union actions, widely regarded as part of the fight for a return to democracy, could count on the sympathy or tolerance of the mass of the population. The first decade of the new century also saw a cycle of strikes, despite the difference in the economic and political situation. In saying this we must warn the reader that the exceptional strike cycle of 1978-1992 cannot be taken as a measure of the size and nature of the union crisis that began in 1990 or the recovery of unionism at the opening of the new century.6 The greater part of the 1980s and the first half of the 1990s were marked by a very high inflation rate that more than once bordered on hyperinflation. By 2000 the inflation rate had fallen, and it has stayed low ever since. Nevertheless, we cannot consider the increase in strikes caused by the impact of inflation on the purchasing power of wages or their decrease in response to price stability in themselves as indicating the strength or weakness of the union movement.

With these reservations, we still believe that, taking the frequency and severity of strikes as an indicator, we can assert that Brazilian unionism in these early years of the twenty-first century is in a phase of full recovery.7 Among the probable reasons for this recovery are the following: (1) a return to economic growth; (2) a recovery in the number of available jobs; (3) inflation of food prices, which weighs more heavily on working-class budgets, well above the overall inflation rate; (4) the existence of a democratic system of government; (5) the fact that during the two presidencies of Lula da Silva the state appara tus, the chairmanships, and the management of state-run enterprises were all made up of people who came largely from the union movement (between 2004 and 2007, the federal government and the state-run enterprises dealt with over 90 percent of the strikes launched by civil servants and by workers in state-run enterprises); (6) the breakdown of the influence of neoliberalism indicated by Lula's reelection and by the new left-wing and center-left gov ernments in Latin America; (7) the political rivalry among the various union federations, whose number and variety of political and ideological orientations increased in this period; and (8) the unions' 10 years of experience of the so-called flexibility of the restructuring of capitalist production and the construction of alternative responses to it (Marcelino, 2008).

In other words, our hypothesis is that changes in the economic, political, and ideological background have favored the recovery of union activity. If this is so, then clearly there can remain little justification for the idea of an inevitable historic decline of unionism. With a change in the environment, the situation of the union movement has changed too.

A number of features of the profile of the contemporary strike cycle are worth emphasizing:

1. The number of strikes and of strikers has been significant: between 2004 and 2009 there was a yearly average of 360 strikes involving 1.5 million strikers. In 2008, the year of the economic crisis, there were 411 strikes and 2 million strikers. The predominance in these years of the public sector (civil servants and employees of state enterprises) is worth noting. Only in 2008 were there more strikes in the private sector than in the public sector (224 as opposed to 184). The number of both strikes and strikers in the private sector had been high even before 2008, however, and had in fact been increasing throughout the 2004-2008 quinquennium (Tables 1 and 2).8

2. Most of the strikes have been offensive,9 seeking to improve the workers' wages and conditions rather than just to defend what had already been won or win back what had been lost. The most frequent demands in this new cycle have been for a real increase in wages and a share of the profits or an increase in that share. The number of defensive strikes—those to recover arrears in wage payments, to get existing rights enforced, etc.—has declined. The frequency of offensive strikes has varied by industry; in the private sector they have been in manufacturing plants, whereas stoppages in the service industry have far more often been defensive (DIEESE, 2006: 37). In 2004 and 2005, almost half the strikes were over wage rates. Disputes over late payment of wages were in third place in 2004, accounting for 19 percent of strikes, but in 2005 they had fallen to fifth place, accounting for only 12 percent. It was only in the service industries that disputes over late payment remained as important as those over wage rates. In the period 2004 to 2008 as a whole, the majority of strikes—65 percent or more—were offensive. This contrasts with what hap pened in the 1990s, when, according to the DIEESE (2009: 4), although there were more strikes, most of them were defensive. It seems that in the 1990s work ers had to run hard just to stay in the same place, whereas in the following decade they were managing, with less effort, to advance and make new conquests despite

3. These strikes have been, for the most part, wholly or partly successful in achieving their employers to negotiate, and in 75 percent of these cases they were wholly or partly successful. The number of strikes that ended without success was quite low: only 7 percent of all strikes in 2004 and only 6 percent in 2005. The overall proportions of successful or partly successful strikes over the quinquennium were 2004, 70 percent; 2005, 75 percent; 2006, 75 percent; 2007, 60 percent; and 2008, 73 percent (DIEESE, 2009). Data on wage rate increases (Table 4) are also instructive. In 2004, the number of wage agreements above the Index of Consumer Prices increased markedly, from 18 percent to 54 percent of strike results. Since then, this pro portion has continued to grow, reaching an impressive 87 percent of strikes ending with wage settlements above inflation in 2007. In 2008, some 88 percent managed to achieve increases equaling or exceeding the inflation rate (DIEESE, 2009).11

4. Although most of these strikes were purely local, there were also quite a few mass strikes, and the strikers used public actions to put pressure on the employers. In 2005 there were some 25 strikes involving more than 10,000 workers each, and 9 of these involved over 50,000. In 2007 some 14 strikes involved more than 10,000 strikers each. Many of these mass strikes were by civil servants, mainly those in education or health, but there were mass strikes in the private sector and in state-owned enterprises. There was a national strike of automotive-industry workers involving 170,000, a statewide one in Sao Paulo involving 190,000, another Sao Paulo state strike of construction workers involving 130,000, a strike of 80,000 postal workers, one of 100,000 oil workers, and mass strikes of bank employees and others. These mass strikes were almost all offensive actions.

A considerable number of strikes employed activities that required a higher level of organizing and mobilizing and gave union activity greater visibility, such as public demonstrations, marches, picketing, and the occupation of workplaces. In 2005 such activities accompanied 66 strikes (22 percent of all strikes in that year). Thirty-nine of these were accompanied by public demon strations, 25 by street marches, 20 by picketing to enforce the strike, 8 by workplace occupations, 5 by camping out, and 3 by mounting of a watch. In 2007 the number of strikes with public demonstrations was 83, those with street marches 42, those with picketing 20, those with workplace occupations 19, those where the strikers camped out 12, and those for which watches were mounted 2. In other words, actions that gave political and social visibility to strikes and hardened the struggle with employers increased significantly between 2005 and 2007.

#### Raising the minimum wage solves income inequality

Moser & Engbom 20 [(Christian, an Assistant Professor within the Economics Division and Chazen Senior Scholar at Columbia Business School and an affiliated faculty member within the Department of Economics at Columbia University.) (Niklas,an assistant professor at New York University Stern School of Business focusing on issues in macroeconomics and labor economics. He is also a Faculty Research Fellow at the NBER, a Research Affiliate at CEPR and an affiliated researcher at UCLS.) “How a rising minimum wage reduced earnings inequality in Brazil,” VoxDev, 3/2/20. https://voxdev.org/topic/labour-markets-migration/how-rising-minimum-wage-reduced-earnings-inequality-brazil. Graphs omitted.] RR

In two recent studies, we chose Brazil as a real-life laboratory for examining the effects of a rising minimum wage (Alvarez et al. 2018, Engbom and Moser 2018). While Brazil has around one sixth of the per-capita income of the US, both countries have a highly unequal income distribution. Importantly, the results for South America’s largest economy are striking and some of these lessons could indeed carry over elsewhere.

What happened in Brazil?

In addition to its large economy and inequality levels, we chose Brazil because administrative government records and household surveys provide a trove of useful microdata on employer- and employee-related drivers of earnings differences. We took a first look at these microdata through the lens of an econometric model based on the method developed by Abowd et al. (1999), which controls for key dimensions of worker and firm differences in pay. This high-dimensional econometric model allowed us to separately account for worker and firm heterogeneity in pay within rolling time windows.

We find that between 1996 and 2012, the earnings gap between the upper and lower earnings levels in Brazil decreased by 11%. This sizeable decline in earnings inequality resembles the experience of other Latin American economies during this period, but stands in stark contrast to that of the US and many developed countries, which saw steady increases in inequality over the past two decades.

To be sure, Brazil has experienced many societal, regulatory and economic changes since the early 1990s, ranging from high rates of inflation and a financial crisis to the expansion of various social programmes. Notably, the country also increased the real minimum wage by 119% during this period, which our analysis indicates was the main catalyst in decreasing income discrepancies. Figure 1 shows the evolution of earnings inequality, measured as the variance of log earnings, and that of the real minimum wage over the period 1988-2012.

Figure 1

We concluded that:

The increase in the minimum wage accounts for more than half (55%) of the decline in Brazil’s earnings inequality among formal sector employees.

Although earnings growth is most pronounced amongst earners at the lowest levels, the direct contribution by minimum wage workers explains less than one-third (25-30%) of the total reduction in inequality. ‘Spillover’ effects that also raise earnings of employees above the minimum wage level increased paychecks up to the 80th percentile of the earnings distribution.

The large increase in the minimum wage was associated with little additional unemployment and a negligible shift of workers to the informal sector. This is corroborated by the fact that Brazil’s overall labor force participation rate has remained roughly stable at 64% over this period.1

Brazilian firms’ response to the rising minimum wage

Raising the minimum wage affected both specific worker skill groups and the businesses hiring them. This is important because narrowing the pay gap across companies has contributed to a substantial decline in Brazil’s earnings inequality since 1990. The share of adult male workers employed at the minimum wage level is well below 10% in Brazil. But employers bumped up earnings for all employees up to the 80th percentile once the floor was raised.

The reason for such wide-ranging action was to maintain a competitive edge in the jobs market, particularly among specific industries or skill sets. Once the lowest paying employers complied with minimum wage hikes, higher-paying counterparts reacted by pushing up their pay scale to maintain employment at equilibrium. Pay discrepancies between Brazilian firms tended to be substantial in the early 1990s, which allowed for ample room for such pay spillovers between employers.

The impact of a higher minimum wage was disproportionately felt in those areas of Brazil and in industries with initially lower average income levels. This led to a pronounced rise in average earnings at the bottom of the national income distribution and a sharp decline in lower-tail earnings inequality (e.g. the 50-10 earnings percentile ratio).

As companies increased their pay, they allotted a higher percentage of their budget to payroll. This cut into firm profits, particularly for small and less productive enterprises. Consequently, as the share of their budgets earmarked for labour increased, some companies responded by reducing their hiring.

At the same time, however, workers gravitated to better paying (and more productive) companies, where workers always receive a lower share of their productive value. As a result, the overall increase in labour’s share of profits, as well as the negative employment response, was dampened.

How the Brazilian workforce changed

The profile of Brazilian workers evolved as well in the 16 years between 1996 and 2012, which may have also contributed to the decline in earnings inequality. One example being that employees became more likely to change jobs. While still less frequent than in the US, migration between jobs became a powerful engine for individual earnings growth.

Over time, the average education level of Brazilian workers increased. However, our results do not support the often-articulated view that a better educated workforce spurred Brazil’s inequality squeeze. Companies tended to discount the premium previously placed on high school and college degrees, at the same time as educational attainment soared over this period. Simply put, education became more of a commodity.

The age structure of the workforce went through a transition as well with the age distribution tilting towards older workers. As with education, the rise in the minimum wage led employers to discount relative experience levels of an older workforce.

We estimate that demographics and changes in worker input contributed about 29% to the narrowing of Brazil’s income gap. Our findings attribute a bigger share (40%) of the reduction to the minimum wage hikes and employer responses to raising that wage floor. We attribute two thirds of the change in between-firm inequality to firms’ equilibrium response of raising pay even if the minimum wage was not binding for them, resulting in ‘trickle-up’ wage hikes to higher-paid individuals.

Concluding remarks: The effect of a rising minimum wage on inequality depends on the economic context

To be sure, notable differences exist between emerging and developed markets. The increase in the minimum wage may have had an outsized effect on reducing earnings inequality in Brazil because the income gap was initially very high. The effects of a rising minimum wage on inequality could be much smaller and the impact on employment more negative under different labour market conditions, such as those in more developed countries. For example, previous work on the effects of the minimum wage on the earnings distribution in the US indicates spillovers up to only the 20th percentile of earnings distribution (Autor et al. 2016). However, the striking results that Brazil achieved in narrowing its inequality gap may offer lessons that could carry over to the US and OECD countries. Further work is needed to assess the size and determinants of spillovers of the minimum wage in different economies.

#### Brazil is key to the global economy— continued economic recession causes collapse

Lachman 20 [(Desmond, a resident fellow at the American Enterprise Institute. He was formerly a deputy director in the International Monetary Fund's Policy Development and Review Department and the chief emerging market economic strategist at Salomon Smith Barney.) “Brazil's dark cloud over the global economy,” The Hill, 5/28/20. https://thehill.com/opinion/international/499817-brazils-dark-cloud-over-the-global-economy] RR

For the global economy, it would never be a good time for an economy as large as that of Brazil to have a political and economic crisis. But now is a particularly inopportune time for such a crisis. The world is in its deepest economic recession in the past 90 years, and other major emerging market economies too are facing severe coronavirus-induced economic challenges that would be exacerbated by a Brazilian crisis.

Brazil is not just another emerging market economy; rather, it accounts for around half of South America’s overall output, and it currently ranks as the world’s eighth largest economy. It also is a highly indebted country with a government debt that now totals around $2 trillion. With Brazilian debt being a major component of most emerging bond portfolios, a Brazilian economic crisis has the potential to roil world financial markets.

Even before the coronavirus crisis, the Brazilian economy was in the midst of a lost economic decade as its economy struggled to recover from its very deep 2014-2016 economic recession. Despite initial hopes that Jair Bolsonaro’s ascension to the presidency in October 2018 might bring much needed economic reform to the country, last year the Brazilian economy grew by barely 1 percent. That left Brazilian output well below its level some 10 years earlier.

Brazil’s sclerotic economy, coupled with its long delay in addressing its chronic public pension problem, has not been good for its public finances. Already before the pandemic, the persistence of large budget deficits raised serious questions about the country’s public debt sustainability. By the end of 2019, Brazil’s public debt had reached 80 percent of GDP, which is a very high level for an emerging market economy.

It would be a gross understatement to say that the coronavirus pandemic has considerably darkened an already gloomy Brazilian economic outlook. This has not least been because of the total state of denial in which Mr. Bolsonaro finds himself as to the seriousness of the pandemic and because of his gross incompetence in meeting this major health challenge.

Lacking any plan to address the pandemic’s spread, Brazil has now become the country with the third-largest number of coronavirus fatalities in the world with every indication that matters will get a lot worse before they get any better. It is also troubling that the pandemic seems set to further delay any meaningful economic reform in Brazil as the country’s domestic political crisis deepens and as calls for Bolsonaro’s impeachment grow ever louder.

All of this has heightened market doubts about Brazil’s ability to meet its debt service payments and has led to a 30 percent plunge in the Brazilian currency since the start of the year. It has also led the IMF to substantially downgrade its forecast of the Brazilian economy. The IMF now expects that the Brazilian economy will contract by more than 5 percent in 2020. That in turn will cause the Brazilian budget deficit to balloon to almost 10 percent of GDP and will contribute to a rise in the public debt to GDP ratio to almost 100 percent by the end of 2020.

A full-blown Brazilian debt crisis would be the last thing that a fragile global economy now needs. This would especially seem to be the case at time when other emerging market economies like Argentina, Ecuador, Lebanon and Venezuela have either defaulted or are well on their way to defaulting on their debt. It would also seem to be the case at a time when serious questions are being raised about debt sustainability in Italy, South Africa and Turkey.

With Brazil’s coronavirus pandemic showing every sign of spinning out of control and with Bolsonaro’s government showing every sign of crumbling, global economic policymakers would ignore Brazil’s troubling political and economic outlook at their peril. A Brazilian economic and financial crisis has the real potential of triggering a very much broader emerging market crisis by accelerating the rapid pace at which capital is already being withdrawn from the emerging market economies.

**Economic decline causes global nuclear war**

**Tønnesson 15** [(Stein, Research Professor, Peace Research Institute Oslo; Leader of East Asia Peace program, Uppsala University) “Deterrence, interdependence and Sino–US peace,” International Area Studies Review, Vol. 18, No. 3, p. 297-311, 2015] SJDI

Several **recent works** on China and Sino–US relations **have made** substantial **contributions to the current understanding of how and under what circumstances** a combination of **nuclear deterrence and economic interdependence may reduce the risk of war between major powers**. At least four conclusions can be drawn from the review above: first, those who say that **interdependence may both inhibit and drive conflict** are right. **Interdependence raises the cost of conflict** for all sides **but** **asymmetrical or unbalanced dependencies and negative trade expectations** may **generate tensions leading to trade wars among inter-dependent states that** in turn **increase the risk of military conflict** (Copeland, 2015: 1, 14, 437; Roach, 2014). The risk may increase if one of the interdependent countries is governed by an inward-looking socio-economic coalition (Solingen, 2015); second, the risk of war between China and the US should not just be analysed bilaterally but include their allies and partners. Third party countries could drag China or the US into confrontation; third, in this context it is of some comfort that the three main economic powers in Northeast Asia (China, Japan and South Korea) are all deeply integrated economically through production networks within a global system of trade and finance (Ravenhill, 2014; Yoshimatsu, 2014: 576); and fourth, **decisions for war** and peace **are taken by very few people, who act on the basis of their future expectations**. International relations theory must be supplemented by foreign policy analysis in order to assess the value attributed by national decision-makers to economic development and their assessments of risks and opportunities. **If leaders** on either side of the Atlantic **begin to seriously fear or anticipate their own nation’s** decline then they **may blame** this on **external dependence, appeal to anti-foreign sentiments, contemplate the use of force to gain** respect or **credibility, adopt protectionist policies, and** ultimately **refuse to be deterred by** either **nuclear arms or prospects of socioeconomic calamities. Such a dangerous shift could happen abruptly**, i.e. under the instigation of actions by a third party – or against a third party.

Yet as long as there is both nuclear deterrence and interdependence, the tensions **in East Asia** are unlikely to escalate to war. As Chan (2013) says, all states in the region are aware that they cannot count on support from either China or the US if they make provocative moves. The greatest risk is not that a territorial dispute leads to war under present circumstances but that changes in the world economy alter those circumstances in ways that render inter-state peace more **precarious**. If China and the US fail to rebalance their financial and trading relations (Roach, 2014) then a trade war could result, interrupting transnational production networks, provoking social distress, and exacerbating nationalist emotions. **This could have unforeseen consequences in the field of security, with nuclear deterrence remaining the only factor to protect the world from Armageddon, and unreliably so**. **Deterrence could lose its credibility**: one of the two **great powers might gamble that the other yield in a cyber-war or conventional** limited **war**, or third party countries might engage in conflict with each other, with a view to obliging Washington or Beijing to intervene.

### Advantage 2 – Climate

#### Advantage 2 is climate

#### A general strike ends Bolsonaro’s assault on labor and stops the privatization of public infrastructure and sale of oil rights

Fox 19 [(Micheal, a freelance reporter and video journalist based in Brazil. He is the former editor of the NACLA Report on the Americas and the author of two books on Latin America.) “Brazil’s Labor Unions Prepare for War with Far-Right President Jair Bolsanaro,” In These Times, 3/19/19. https://inthesetimes.com/article/jair-bolsonaro-war-on-brazils-unions] RR

FLORIANÓPOLIS, BRAZIL — On a gray afternoon in early February, 60 local leaders from roughly 40 unions meet at the tan, seven-story headquarters of the Santa Catarina State Commerce Workers Federation to discuss how to move forward under Brazil’s new, far-right president, Jair Bolsonaro. They represent metalworkers, teachers and just about everything in between. Similar meetings have been held around the country.

“We have to unite, or we will be carried away by a dictatorial government."

Since Bolsonaro’s inauguration January 1, he has unleashed an assault on workers and unions. He lowered the minimum wage (despite inflation) and closed the country’s 88-year-old Ministry of Labor. The sign was quickly taken down from the government building in Brasilia.

“There is an excess of rights,” Bolsonaro has said of labor.

At the Florianópolis meeting, behind a long table hung with red, yellow and white union banners, Anna Julia Rodrigues, state president of the country’s largest labor federation, CUT, calls for unity. ​“We have to unite, or we will be carried away by a dictatorial government,” she says.

Ingrid Assis, an indigenous labor leader with CSP-Conlutas, a labor federation that includes unions and grassroots movements, takes the call for unity to another level. She challenges those in the room not to forget that the country’s indigenous peoples — whose sovereignty over their land is under attack by Bolsonaro — are workers, too.

“The union movement has to embrace this struggle,” says Assis.

Both speakers are greeted with applause. But will unity be enough?

Michael Fox reports on Brazilian unions for the Real News Network

“Today we are living in the worst moment for the working class in recent history in Brazil,” Rodrigo Britto, the president of the Brasilia branch of CUT, tells In These Times. ​“We are returning to the 19th century.”

Workers have been fighting an uphill battle since the 2016 impeachment of Workers’ Party President Dilma Rousseff, a move that many called a congressional coup.

In 2017, the conservative Congress passed a labor reform bill that gutted workers’ rights, ended mandatory union contributions, opened the door to outsourcing and allowed bosses to negotiate directly with individuals, side-stepping unions.

With Bolsonaro’s election, it got worse.

Bolsonaro is a former military captain who promised to fight corruption, violence and Brazil’s Left. He vowed to put guns into people’s hands, end activism and eliminate his political opponents.

“You have to do away with unions in Brazil ‚” he told reporters.

Labor analysts believe the closure of the Ministry of Labor is a move in that direction. Former Labor Minister Manoel Dias called it a ​“crime.”

The Finance Ministry is now in charge of pensions, workplace oversight, health and safety, and guidelines for workers’ salaries. Under the direction of Bolsonaro’s finance minister, Paulo Guedes — one of the ​“Chicago Boys,” neoliberal Latin American economists who studied under Milton Friedman at the University of Chicago — it’s hard to imagine the ministry carrying out workplace inspections.

The registration of unions now falls under the jurisdiction of the Ministry of Justice, overseen by Minister Sérgio Moro, the former judge who jailed ex-president Luiz Inacío Lula da Silva on controversial evidence, blocking him from running against Bolsonaro. In January, Moro announced he would choose a Federal Police officer to oversee union registration.

“The criminalization of the union movement begins ‚” Workers’ Party president Gleisi Hoffmann responded.

Hoffmann and others fear Moro and his people may move to strip the registration of unions as a way to weaken labor organizing in the country, and in the words of Bolsonaro’s philosopher-guru Olavo de Carvalho, ​“break the legs” of the enemies of the government.

“Their objective is to silence those that are opposing this policy of privatizations that they are planning,” Jose Maria Rangel, the president of the United Federation of Oil Workers (FUP), told In These Times.

Privatization

Shortly after his inauguration, Bolsonaro announced plans for a first round of privatizations.

“We will quickly attract initial investments worth roughly 7 billion reals, with concessions for railroads, 12 airports and 4 ports,” Bolsonaro wrote on Twitter.

His conservative predecessor Michel Temer — who came to power in 2016, with the impeachment of former president Dilma Rousseff — had already begun auctioning off state infrastructure and the private rights for oil production in Brazil’s massive off-shore oil reserves, known as Pre-Salt.

But privatizations are expected to take a much more prominent role under Bolsonaro and finance minister Guedes.

In late January, the new privatization secretary, businessman Salim Mattar, announced plans to sell off $20 Billion in state shares of public companies, including Brazil’s state-oil giant Petrobras. Petrobras is South America’s largest oil company, producing roughly 2.6 million barrels of oil a day.

Petrobras was at the center of the country’s massive Lava Jato corruption scandal. This has been used as an excuse to push for the sell-off of the company’s assets.

During a talk in late January, Mattar said that the Brazilian government is looking to auction the majority of Petrobras’s 36 subsidiaries in less than four years.

The move would mean big money for Brazil now, but a loss of major government assets, investments, and profit, in the longterm. For oil workers it would be disastrous, with potential layoffs, outsourcing and loss of benefits.

“We have to raise awareness in society about the importance of state companies,” says the FUP’s Rangel. ​“We have to defend our rights. We have to try to stop the privatization of businesses. We have to try and stop the pension reform.”

Pensions

Bolsonaro and his allies in Congress are looking to slash pension benefits and drastically increase the years of work required to earn them, in the name of staving off financial disaster.

Unions across the country have promised to do everything to stop them, including a general strike, if necessary. Brazil’s unions carried out two general strikes in 2017 against the pension and labor reforms.

Bolsonaro’s allies don’t yet have the votes they need, but they have powerful forces on their side, such as the evangelical caucus.

Unions, however, believe this is a fight workers can win.

On February 20, thousands rallied against the reform in São Paulo and 11 other cities. Thousands more protested again on March 8, International Women’s Day, and another day of rallies is planned for March 22. Unions are laying plans for more protests in the coming months: printing materials, handing out flyers and locking in dates.

On top of Bolsonaro’s move to undercut unions and workers’ rights, unemployment in Brazil remains high, at just under 12 percent, double the rate just five years ago under the Workers’ Party. Outsourcing has made the job market more precarious. Informal employment and unemployment are both expected to rise.

“This moment is really intense,” Assis tells In These Times. ​“We can’t trust Congress and its corrupt representatives. We have to construct alternatives and these alternatives have to come by the hands of the workers.”

#### Stopping Bolsonaro’s climate agenda is key to stopping climate change and preventing new pandemics

Goodell 6/9 [(Jeff, an American author and contributing editor to Rolling Stone magazine. Goodell's writings are known for a focus on energy and environmental issues.) “What to Do About Jair Bolsonaro, the World’s Most Dangerous Climate Denier,” Rolling Stone, 6/9/21. https://www.rollingstone.com/politics/politics-features/jair-bolsonaro-rainforest-destruction-1180129/] RR

There’s no prison (yet) for climate criminals, but if there was, Brazilian President Jair Bolsonaro would have a spider-infested cell all to himself. Now that Trump is gone, Bolsonaro — a.k.a. “The Trump of the Tropics” or “Captain Chain Saw”— is the most dangerous climate denier in the world. In his two years as president, Bolsonaro has presided over the destruction of about 10,000 square miles of the Brazilian rainforest, one of the most precious ecosystems on the planet. And like Trump, Bolsonaro is proud of his efforts to fuck up the planet. If people were so concerned about climate change, he once suggested, they could eat less and “poop every other day” to save the Earth. When Pope Francis called out the “blind and destructive mentality” behind razing the rainforest, Bolsonaro responded by telling journalists, “Brazil is the virgin that every foreign pervert wants to get their hands on.”

If the climate crisis weren’t so urgent, Bolsonaro would be a problem only for Brazil and its neighbors. But Brazil is a key player in the push to zero-out global carbon pollution. Rainforests absorb about 10 percent of CO2 emissions. With every square mile of rainforest that is cut down, the Paris Agreement’s target of keeping global temperature rise below 1.5 C becomes more and more unattainable. “If we can’t do something about deforestation in Brazil, then the 1.5 C target is probably out of reach,” says Jake Schmidt, senior strategic director for climate with the Natural Resources Defense Council.

At Joe Biden’s climate summit in April, Bolsonaro talked a good game, committing to ending illegal deforestation by 2030. He also moved up the date for becoming carbon neutral from 2060 to 2050, and promised to double the budget for enforcing the forest’s protections. But according to a number of sources and published accounts, Brazil’s minister of the environment, Ricardo Salles, made the deal more explicit in backstage negotiations with the U.S. and other countries: Pay us $1 billion and we’ll cut deforestation by 40 percent for one year.

“It’s extortion,” argues Marcio Astrini, the executive secretary of the Brazilian Climate Observatory, an alliance of 63 civil society organizations. “Bolsonaro and his team are saying, ‘If you don’t give us the money, we don’t know what will happen to the Amazon.’ Everyone knows Bolsonaro is not interested in the climate. He is only interested in using the climate to extort money to use for himself and his friends.”

The Amazon rainforest has been around for 55 million years and is one of the most biologically complex regions of the world, home to one-tenth of all living plant and animal species. The entire Amazon basin includes eight South American countries, but Brazil holds about two-thirds of it.

Globally, about 300,000 square miles of tropical forests were lost between 2013 and 2019 — that’s the equivalent of clearing more than five Manhattans every day for seven years. About one-quarter of that destruction happened in Brazil, and it was almost entirely driven by commercial agriculture, which in Brazil is mostly cattle and soy plantations.

But to call it “commercial agriculture” is a bit of a stretch. In Brazil, almost all of this deforestation happens illegally, by settlers with chain saws and bulldozers who just clear the land, sell the wood, and start raising cattle or soy. As Beto Verissimo, co-founder of Imazon, a Brazilian research institute that promotes sustainable development, puts it, “Deforestation has no relation to economic growth. It’s just organized crime.”

And it’s a crime with increasingly dire implications not just for Brazilians, but for the entire planet. For one thing, tropical rainforests, with their staggering biodiversity, are a likely cradle of dangerous new pathogens. Cutting down rainforests is a good way to release those pathogens and, perhaps, unleash a new pandemic.

For another, rampant deforestation risks transforming the rainforest from a carbon sink to a carbon source (as trees grow, they absorb CO2 and store carbon; when they die, that stored carbon is released). It could also trigger a larger collapse of the entire rainforest ecosystem. Rainforests create their own weather systems, including rainfall. As the size of the rainforest declines, it lengthens the forest’s dry season, triggering even greater warming and drying, killing trees in the nearby still-intact forest, and eventually causing the entire ecosystem to shift from rainforest to savanna. Such a collapse would dramatically alter weather patterns throughout the Southern Hemisphere and accelerate climate chaos in ways that even the most doom-y climate activists would prefer not to imagine.

The tipping point for such a collapse in the Amazon is between 20 and 25 percent deforestation, according to one study. Right now, 15 to 17 percent of the forest has already been cut down. “If you exceed the threshold,” Carlos Nobre, a Brazilian climate and tropical-forest expert has said, “50 to 60 percent of the forest could be gone over three to five decades.”

Large-scale deforestation began in Brazil in the 1970s with government policies that encouraged settlement, and continued unimpeded for the next 20 years. Between 1978 and 2001, the amount of deforested land increased fourfold. Overall, the population of the Amazon increased from 2.9 million in 1960 to 25.5 million by 2010. Logging also thrived, as the demand for mahogany and other hardwoods in Asia and Europe soared in the 1990s.

By 2000, the damage from deforestation was causing an outcry among activists, and Brazilian authorities took action. National parks and indigenous reserves were created, and those protections were stringently enforced with a robust forest service and budget. Between 2002 and 2016, the rate of deforestation fell dramatically. “We were getting it under control,” says Astrini. At its peak, Brazil likely reduced emissions by more than 1.3 gigatons of CO2 per year. By comparison, in their best year, the U.S., Japan, and the EU together reduced emissions by less than a quarter of that.

But when Bolsonaro took office in 2019, that progress ended. His winning coalition of right-wing nationalists and pro-development centrists didn’t give a shit about climate change. He immediately slashed budgets for monitoring and enforcement in the Amazon. “Bolsonaro has basically said, ‘We’re open for business,’ ” says NRDC’s Schmidt. “ ‘If you guys wanna deforest, we’re not going to do any enforcement on it.’ ”

Less than a year after Bolsonaro took office, the Amazon exploded in flames. More than 3,500 square miles of the rainforest burned, blackening the skies in São Paulo and bringing international attention to the destruction of the rainforest under Bolsonaro’s watch. Bolsonaro blamed NGOs, which were trying to “bring problems to Brazil.” French President Emmanuel Macron called Bolsonaro’s deforestation policies “ecocide” and tweeted: “Our house is burning. Literally. The Amazon rainforest — the lungs which produce 20 percent of our planet’s oxygen — is on fire. It is an international crisis.”

Bolsonaro was unrepentant, telling Macron and everyone else to butt out: “The Amazon is ours, not yours.”

After taking office, Bolsonaro slashed budgets for monitoring preservation enforcement in the Amazon.

Now, with so much at stake in the upcoming COP26 meeting, i.e., the U.N. climate-change negotiations scheduled for this November, the question is what to do about Bolsonaro’s rainforest extortion demands. Any hope of hitting the 1.5 C target depends on dramatically reining in deforestation in Brazil. But any hope of dramatically reining in deforestation depends on Bolsonaro taking action. And because he is a thug, the only way to do that is to pay him (or, if you prefer, to pay the nation of Brazil, which amounts to the same thing).

This is not a new idea. The Green Climate Fund, for example, which the rich nations of the world have promised to fund at a level of $100 billion a year, is expressly designed to pay poorer nations to do things that will avoid CO2 emissions. The Amazon Fund, which developed nations created to save the rainforest, has spent more than $500 million on projects to prevent and combat deforestation (Norway was the biggest contributor until it cut funding in response to Bolsonaro’s slash-and-burn politics). On the campaign trail last year, Biden went so far as to promise he’d mobilize nations to pay Brazil $20 billion to keep the South American country from destroying the rainforest.

From Bolsonaro’s point of view, the trouble is, all this money comes with restrictions. It requires oversight, citizen involvement, transparency in accounting. Bolsonaro wants to use it for whatever he wants, Astrini says, “including paying off his friends and supporters.”

So this is the dilemma right now. Biden and EU leaders are making a big push toward COP26, hoping to demonstrate that the ghost of Trump is gone and the world is finally taking the climate crisis seriously. It will be impossible to make that case if Brazil is not on board — and Bolsonaro, of course, knows this, which gives him a lot of leverage in the negotiations.

Brazilian NGOs and others have been writing letters to the White House, telling Biden not to trust a word that Bolsonaro says. “We’re being told that the U.S. is basically running into a trap with Brazil,” says Alden Meyer, a longtime U.S. climate-policy analyst who is now with E3G, a climate-change think tank. “We are being told he is making commitments that he has no intention of keeping, and that they wouldn’t have the kinds of structures in place to assure good use of the funds, even if they were committed.”

**Warming causes extinction**

**Ramanathan et al. 17** [Veerabhadran Ramanathan is Victor Alderson Professor of Applied Ocean Sciences and director of the Center for Atmospheric Sciences at the Scripps Institution of Oceanography, University of California, San Diego, Dr. William Collins is an internationally recognized expert in climate modeling and climate change science. He is the Director of the Climate and Ecosystem Sciences Division (CESD) for the Earth and Environmental Sciences Area (EESA) at the Lawrence Berkeley National Laboratory (LBNL), Prof. Dr Mark Lawrence, Ph.D. is scientific director at the Institute for Advanced Sustainability Studies (IASS) in Potsdam, Örjan Gustafsson is a Professor in the Department of Environmental Science and Analytic Chemistry at Stockholm University, Shichang Kang is Professor, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences (CAS); CAS Center for Excellence in Tibetan Plateau Earth Sciences, and Molina, M.J., Zaelke, D., Borgford-Parnell, N., Xu, Y., Alex, K., Auffhammer, M., Bledsoe, P., Croes, B., Forman, F., Haines, A., Harnish, R., Jacobson, M.Z., Lawrence, M., Leloup, D., Lenton, T., Morehouse, T., Munk, W., Picolotti, R., Prather, K., Raga, G., Rignot, E., Shindell, D., Singh, A.K., Steiner, A., Thiemens, M., Titley, D.W., Tucker, M.E., Tripathi, S., & Victor, D., authors come from the following 9 countries - US, Switzerland, Sweden, UK, China, Germany, Australia, Mexico, India, “Well Under 2 Degrees Celsius: Fast Action Policies to Protect People and the Planet from Extreme Climate Change,” Report of the Committee to Prevent Extreme Climate Change, September 2017, http://www.igsd.org/wp-content/uploads/2017/09/Well-Under-2-Degrees-Celsius-Report-2017.pdf] TDI

**Climate change is becoming an existential threat with warming in excess of 2°C within the next three decades and 4°C to 6°C within the next several decades. Warming of such magnitudes will expose as many as 75% of the world’s population to deadly heat stress in addition to disrupting the climate and weather worldwide. Climate change is an urgent problem requiring urgent solutions**. This paper lays out urgent and **practical solutions that are ready for implementation now, will deliver benefits in the next few critical decades**, and places the world on a path to achieving the longterm targets of the Paris Agreement and near-term sustainable development goals. The approach consists of four building blocks and 3 levers to implement ten scalable solutions described in this report by a team of climate scientists, policy makers, social and behavioral scientists, political scientists, legal experts, diplomats, and military experts from around the world. These solutions will enable society to decarbonize the global energy system by 2050 through efficiency and renewables, drastically reduce short-lived climate pollutants, and stabilize the climate well below 2°C both in the near term (before 2050) and in the long term (post 2050). It will also reduce premature mortalities by tens of millions by 2050. As an insurance against policy lapses, mitigation delays and faster than projected climate changes, the solutions include an Atmospheric Carbon Extraction lever to remove CO2 from the air. The amount of CO2 that must be removed ranges from negligible, if the emissions of CO2 from the energy system and SLCPs start to decrease by 2020 and carbon neutrality is achieved by 2050, to a staggering one trillion tons if the carbon lever is not pulled and emissions of climate pollutants continue to increase until 2030.

There are numerous living laboratories including 53 cities, many universities around the world, the state of California, and the nation of Sweden, who have embarked on a carbon neutral pathway. These laboratories have already created 8 million jobs in the clean energy industry; they have also shown that **emissions of greenhouse gases and air pollutants can be decoupled from economic growth**. Another favorable sign is that **growth rates of worldwide carbon emissions have reduced from 2.9% per year during the first decade of this century to 1.3% from 2011 to 2014 and near zero growth rates during the last few years. The carbon emission curve is bending, but we have a long way to go and very little time for achieving carbon neutrality**. We need institutions and enterprises that can accelerate this bending by scaling-up the solutions that are being proven in the living laboratories. We have less than a decade to put these solutions in place around the world to preserve nature and our quality of life for generations to come. The time is now.

The Paris Agreement is an historic achievement. For the first time, effectively all nations have committed to limiting their greenhouse gas emissions and taking other actions to limit global temperature change. Specifically, 197 nations agreed to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels,” and achieve carbon neutrality in the second half of this century.

**The climate has already warmed by 1°C. The problem is running ahead of us, and under current trends we will likely reach 1.5°C in the next fifteen years and surpass the 2°C guardrail by mid-century with a 50% probability of reaching 4°C by end of century**. Warming in excess of 3°C is likely to be a global catastrophe for three major reasons:

• **Warming in the range of 3°C to 5°C is suggested as the threshold for several tipping points in the physical and geochemical systems; a warming of about 3°C has a probability of over 40% to cross over multiple tipping points, while a warming close to 5°C increases it to nearly 90%, compared with a baseline warming of less than 1.5°C, which has only just over a 10% probability of exceeding any tipping point.**

**• Health effects of such warming are emerging as a major if not dominant source of concern. Warming of 4°C or more will expose more than 70% of the population, i.e. about 7 billion by the end of the century, to deadly heat stress and expose about 2.4 billion to vector borne diseases such as Dengue, Chikengunya, and Zika virus among others**. Ecologists and paleontologists have proposed that warming in excess of 3°C, accompanied by increased acidity of the oceans by the buildup of CO2 , can become a major causal factor for exposing more than 50% of all species to extinction. 20% of species are in danger of extinction now due to population, habitat destruction, and climate change.

The good news is that **there may still be time to avert such catastrophic changes**. The Paris Agreement and **supporting climate policies must be strengthened substantially within the next five years to bend the emissions curve down faster, stabilize climate, and prevent catastrophic warming**. To the extent those efforts fall short, societies and **ecosystems will be forced to contend with substantial needs for adaptation—a burden that will fall disproportionately on the poorest three billion who are least responsible for causing the climate change problem.**

Here we propose a policy roadmap with a realistic and reasonable chance of limiting global temperature to safe levels and preventing unmanageable climate change—an outline of specific science-based policy pathways that serve as the building blocks for a three-lever strategy that could limit warming to well under 2°C. The projections and the emission pathways proposed in this summary are based on a combination of published recommendations and new model simulations conducted by the authors of this study (see Figure 2). We have framed the plan in terms of four building blocks and three levers, which are implemented through 10 solutions. The first building block would be fully implementing the nationally determined mitigation pledges under the Paris Agreement of the UN Framework Convention on Climate Change (UNFCCC). In addition, several sister agreements that provide targeted and efficient mitigation must be strengthened. Sister agreements include the Kigali Amendment to the Montreal Protocol to phase down HFCs, efforts to address aviation emissions through the International Civil Aviation Organization (ICAO), maritime black carbon emissions through the International Maritime Organization (IMO), and the commitment by the eight countries of the Arctic Council to reduce black carbon emissions by up to 33%. There are many other complementary processes that have drawn attention to specific actions on climate change, such as the Group of 20 (G20), which has emphasized reform of fossil fuel subsidies, and the Climate and Clean Air Coalition (CCAC). HFC measures, for example, can avoid as much as 0.5°C of warming by 2100 through the mandatory global phasedown of HFC refrigerants within the next few decades, and substantially more through parallel efforts to improve energy efficiency of air conditioners and other cooling equipment potentially doubling this climate benefit.

For the second building block, numerous subnational and city scale climate action plans have to be scaled up. One prominent example is California’s Under 2 Coalition signed by over 177 jurisdictions from 37 countries in six continents covering a third of world economy. The goal of this Memorandum of Understanding is to catalyze efforts in many jurisdictions that are comparable with California’s target of 40% reductions in CO2 emissions by 2030 and 80% reductions by 2050—emission cuts that, if achieved globally, would be consistent with stopping warming at about 2°C above pre-industrial levels. Another prominent example is the climate action plans by over 52 cities and 65 businesses around the world aiming to cut emissions by 30% by 2030 and 80% to 100% by 2050. There are concerns that the carbon neutral goal will hinder economic progress; however, real world examples from California and Sweden since 2005 offer evidence that economic growth can be decoupled from carbon emissions and the data for CO2 emissions and GDP reveal that growth in fact prospers with a green economy.

The third building block consists of two levers that we need to pull as hard as we can: one for drastically reducing emissions of short-lived climate pollutants (SLCPs) beginning now and completing by 2030, and the other for decarbonizing the global energy system by 2050 through efficiency and renewables. Pulling both levers simultaneously can keep global temperature rise below 2°C through the end of the century. If we bend the CO2 emissions curve through decarbonization of the energy system such that global emissions peak in 2020 and decrease steadily thereafter until reaching zero in 2050, there is less than a 20% probability of exceeding 2°C. This call for bending the CO2 curve by 2020 is one key way in which this report’s proposal differs from the Paris Agreement and it is perhaps the most difficult task of all those envisioned here. Many cities and jurisdictions are already on this pathway, thus demonstrating its scalability. Achieving carbon neutrality and reducing emissions of SLCPs would also drastically reduce air pollution globally, including all major cities, thus saving millions of lives and over 100 million tons of crops lost to air pollution each year. In addition, these steps would provide clean energy access to the world’s poorest three billion who are still forced to resort to 18th century technologies to meet basic needs such as cooking. For the fourth and the final building block, we are adding a third lever, ACE (Atmospheric Carbon Extraction, also known as Carbon Dioxide Removal, or “CDR”). This lever is added as an insurance against surprises (due to policy lapses, mitigation delays, or non-linear climate changes) and would require development of scalable measures for removing the CO2 already in the atmosphere. The amount of CO2 that must be removed will range from negligible, if the emissions of CO2 from the energy system and SLCPs start to decrease by 2020 and carbon neutrality is achieved by 2050, to a staggering one trillion tons, if CO2 emissions continue to increase until 2030, and the carbon lever is not pulled until after 2030. This issue is raised because the NDCs (Nationally Determined Contributions) accompanying the Paris Agreement would allow CO2 emissions to increase until 2030. We call on economists and experts in political and administrative systems to assess the feasibility and cost-effectiveness of reducing carbon and SLCPs emissions beginning in 2020 compared with delaying it by ten years and then being forced to pull the third lever to extract one trillion tons of CO2

The fast mitigation plan of requiring emissions reductions to begin by 2020, which means that many countries need to cut now, is urgently needed to limit the warming to well under 2°C. Climate change is not a linear problem. Instead, we are facing non-linear climate tipping points that can lead to self-reinforcing and cascading climate change impacts. Tipping points and selfreinforcing feedbacks are wild cards that are more likely with increased temperatures, and many of the potential abrupt climate shifts could happen as warming goes from 1.5°C in 15 years to 2°C by 2050, with the potential to push us well beyond the Paris Agreement goals.

Where Do We Go from Here?

**A massive effort will be needed to stop warming at 2°C, and time is of the essence. With unchecked business-as-usual emissions, global warming has a 50% likelihood of exceeding 4ºC and a 5% probability of exceeding 6ºC in this century, raising existential questions for most, but especially the poorest three billion people. A 4ºC warming is likely to expose as many as 75% of the global population to deadly heat.** Dangerous to catastrophic impacts on the health of people including generations yet to be born, on the health of ecosystems, and on species extinction have emerged as major justifications for mitigating climate change well below 2ºC, although we must recognize that the uncertainties intrinsic in climate and social systems make it hard to pin down exactly the level of warming that will trigger possibly catastrophic impacts. To avoid these consequences, we must act now, and we must act fast and effectively. This report sets out a specific plan for reducing climate change in both the near- and long-term. With aggressive urgent actions, we can protect ourselves. Acting quickly to prevent catastrophic climate change by decarbonization will save millions of lives, trillions of dollars in economic costs, and massive suffering and dislocation to people around the world. This is a global security imperative, as it can avoid the migration and destabilization of entire societies and countries and reduce the likelihood of environmentally driven civil wars and other conflicts.

Staying well under 2°C will require a concerted global effort. We must address everything from our energy systems to our personal choices to reduce emissions to the greatest extent possible. We must redouble our efforts to invent, test, and perfect systems of governance so that the large measure of international cooperation needed to achieve these goals can be realized in practice. The health of people for generations to come and the health of ecosystems crucially depend on an energy revolution beginning now that will take us away from fossil fuels and toward the clean renewable energy sources of the future. It will be nearly impossible to obtain other critical social goals, including for example the UN agenda 2030 with the Sustainable Development Goals, if we do not make immediate and profound progress stabilizing climate, as we are outlining here.

1. The Building Blocks Approach The 2015 Paris Agreement, which went into effect November 2016, is a remarkable, historic achievement. For the frst time, essentially all nations have committed to limit their greenhouse gas emissions and take other actions to limit global temperature and adapt to unavoidable climate change. Nations agreed to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels” and “achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century” (UNFCCC, 2015). Nevertheless, the initial Paris Agreement has to be strengthened substantially within fve years if we are to prevent catastrophic warming; **current pledges place the world on track for up to 3.4°C by 2100 (UNEP, 2016b). Until now, no specifc policy roadmap exists that provides a realistic and reasonable chance of limiting global temperatures to safe levels and preventing unmanageable climate change**. This report is our attempt to provide such a plan— an outline of specifc solutions that serve as the building blocks for a comprehensive strategy for limiting the warming to well under 2°C and avoiding dangerous climate change (Figure 1). The frst building block is the full implementation of the nationally determined mitigation pledges under the Paris Agreement of the UN Framework Convention on Climate Change (UNFCCC) and strengthening global sister agreements, such as the Kigali Amendment to the Montreal Protocol to phase down HFCs, which can provide additional targeted, fast action mitigation at scale. For the second building block, numerous sub-national and city scale climate action plans have to be scaled up such as California’s Under 2 Coalition signed by 177 jurisdictions from 37 countries on six continents. The third building block is targeted measures to reduce emissions of shortlived climate pollutants (SLCPs), beginning now and fully implemented by 2030, along with major measures to fully decarbonize the global economy, causing the overall emissions growth rate to stop in 2020-2030 and reach carbon neutrality by 2050. Such a deep decarbonization would require an energy revolution similar to the Industrial Revolution that was based on fossil fuels. The fnal building block includes scalable and reversible carbon dioxide (CO2 ) removal measures, which can begin removing CO2 already emitted into the atmosphere. Such a plan is urgently needed. Climate change is not a linear problem. Instead, climate tipping points can lead to self-reinforcing, cascading climate change impacts (Lenton et al., 2008). Tipping points are more likely with increased temperatures, and many of the potential abrupt climate shifts could happen as warming goes from 1.5°C to 2°C, with the potential to push us well beyond the Paris Agreement goals (Drijfhout et al., 2015). In order to avoid dangerous climate change, we must address these concerns. **We must act now, and we must act fast. Reduction of SLCPs will result in fast, near-term reductions in warming, while present-day reductions of CO2 will result in long-term climate benefts**. This two-lever approach—aggressively cutting both SLCPs and CO2 –-will slow warming in the coming decades when it is most crucial to avoid impacts from climate change as well as maintain a safe climate many decades from now. To achieve the nearterm goals, we have outlined solutions to be implemented immediately. These solutions to bend down the rising emissions curve and thus bend the warming trajectory curve follow a 2015 assessment by the University of California under its Carbon Neutrality Initiative (Ramanathan et al., 2016). The solutions are clustered into categories of social transformation, governance improvement, market- and regulation-based solutions, technological innovation and transformation, and natural and ecosystem management. Additionally, we need to intensely investigate and pursue a third lever—ACE (Atmospheric Carbon Extraction). While many potential technologies exist, we do not know the extent to which they could be scaled up to remove the requisite amount of carbon from the atmosphere in order to achieve the Paris Agreement goals, and any delay in mitigation will demand increasing reliance on these technologies. Yet, there is still hope. Humanity can come together, as we have done in the past, to collaborate towards a common goal. We have no choice but to tackle the challenge of climate change. We only have the choice of when and how: **either now, through the ambitious plan outlined here, or later, through radical adaptation and societal transformations in response to an ever-deteriorating climate system that will unleash devastating impacts—some of which may be beyond our capacity to fully adapt to or reverse for thousands of years.**

2. Major Climate Disruptions: How Soon and How Fast? “Without adequate mitigation and adaptation, climate change poses unacceptable risks to global public health.” (WHO, 2016)

The planet has already witnessed nearly 1°C of warming, and another 0.6°C of additional warming is currently stored in the ocean to be released over the next two to four decades, if climate warming emissions are not radically reduced during that time (IPCC, 2013). The impacts of this warming on extreme weather, droughts, and foods are being felt by society worldwide to the extent that many think of this no longer as climate change but as climate disruption. Consider the business as usual scenario:

15 years from now: In 15 years, planetary warming will reach 1.5°C above pre-industrial global mean temperature (Ramanathan and Xu, 2010; Shindell et al., 2012). This exceeds the 0.5°C to 1°C of warming during the Eemian period, 115,000– 130,000 years ago, when sea-levels reached 6-9 meters (20-30 feet) higher than today (Hansen et al., 2016b). The impacts of this warming will affect us all yet will disproportionately affect the Earth’s poorest three billion people, who are primarily subsistence farmers that still rely on 18th century technologies and have the least capacity to adapt (IPCC, 2014a; Dasgupta et al., 2015). They thus may be forced to resort to mass migration into city slums and push across international borders (U.S. DOD, 2015). The existential fate of lowlying small islands and coastal communities will also need to be addressed, as they are primarily vulnerable to sea-level rise, diminishing freshwater resources, and more intense storms. In addition, many depend on fsheries for protein, and these are likely to be affected by ocean acidifcation and climate change. Climate injustice could start causing visible regional and international conficts. All of this will be exacerbated as the risk of passing tipping points increases (Lenton et al., 2008).

30 years from now: By mid-century, warming is expected to exceed 2°C, which would be unprecedented with respect to historical records of at least the last one million years (IPCC, 2014c). Such a warming through this century could result in sea-level rise of as much as 2 meters by 2100, with greater sea-level rise to follow. A group of tipping points are clustered between 1.5°C and 2°C (Figure 2) (Drijfhout et al., 2015). The melting of most mountain glaciers, including those in the Tibetan-Himalayas, combined with mega-droughts, heat waves, storms, and foods, would adversely affect nearly everyone on the planet.

80 years from now: In 80 years, warming is expected to exceed 4°C, increasing the likelihood of irreversible and catastrophic change (World Bank, 2013b). 4ºC warming is likely to expose as much as 75% of the global population to deadly heat (Mora et al., 2017). The 2°C and 4°C values quoted above and in other reports, however, are merely the central values with a 50% probability of occurrence (Ramanathan and Feng, 2008). There is a 5% probability the warming could be as high as 6°C due to uncertainties in the magnitude of amplifying feedbacks (see Section 4). This in turn could lead to major disruptions to natural and social systems, threatening food security, water security, and national security and fundamentally affecting the great majority of the projected 11.2 billion inhabitants of the planet in 2100 (UN DESA, 2015).

3. What Are the Wild Cards for Climate Disruption? Increasing the concentrations of greenhouse gases in the atmosphere increases radiative forcing (the difference between the amount of energy entering the atmosphere and leaving) and thus increases the global temperature (IPCC, 2013). However, climate wild cards exist that can alter the linear connection with warming and anthropogenic emissions by triggering abrupt changes in the climate (Lenton et al., 2008). Some of these wild cards have not been thoroughly captured by the models that policymakers rely on the most. These abrupt shifts are irreversible on a human time scale (<100 years) and will create a notable disruption to the climate system, condemning the world to warming beyond that which we have previously projected. These climate disruptions would divert resources from needed mitigation and upset mitigation strategies that we have already put in place.

1. Unmasking Aerosol Cooling: The frst such wild card is the unmasking of an estimated 0.7°C (with an uncertainty range of 0.3°C to 1.2°C) of the warming in addition to mitigating other aerosol effects such as disrupting rainfall patterns, by reducing emissions of aerosols such as sulfates and nitrates as part of air pollution regulations (Wigley, 1991; Ramanathan and Feng, 2008). Aerosol air pollution is a major health hazard with massive costs to public health and society, including contributing to about 7 million deaths (from household and ambient exposure) each year (WHO, 2014). While some aerosols, such as black carbon and brown carbon, strongly absorb sunlight and warm the climate, others refect sunlight back into space, which cools the climate (Ramanathan and Carmichael, 2008). The net impact of all manmade aerosols is negative, meaning that about 30% of the warming from greenhouse gases is being masked by co-emitted air pollution particles (Ramanathan and Carmichael, 2008). As we reduce greenhouse gas emissions and implement policies to eliminate air pollution, we are also reducing the concentration of aerosols in the air. Aerosols last in the atmosphere for about a week, so if we eliminate air pollution without reducing emissions of the greenhouse gases, the unmasking alone would lead to an estimated 0.7°C of warming within a matter of decades (Ramanathan and Feng, 2008). We must eliminate all aerosol emissions due to their health effects, but we must simultaneously mitigate emissions of CO2 , other greenhouse gases, and black carbon and co-pollutants to avoid an abrupt and very large jump in the near-term warming beyond 2°C (Brasseur and Roeckner, 2005).

2. Tipping Points**: It is likely that as we cross the 1.5°C to 2°C thresholds we will trigger so called “tipping points” for abrupt and nonlinear changes in the climate system with catastrophic consequences** for humanity and the environment (Lenton, 2008; Drijfhout et al., 2015). Once the tipping points are passed, the resulting impacts will range in timescales from: disruption of monsoon systems (transition in a year), loss of sea ice (approximately a decade for transition), dieback of major forests (nearly half a century for transition), reorganization of ocean circulation (approximately a century for transition), to loss of ice sheets and subsequent sea-level rise (transition over hundreds of years) (Lenton et al., 2008). Regardless of timescale, once underway many of these changes would be irreversible (Lontzek et al., 2015). There is also a likelihood of crossing over multiple tipping points simultaneously. Warming of close to 3°C would subject the system to a 46% probability of crossing multiple tipping points, while warming of close to 5°C would increase the risk to 87% (Cai et al., 2016). Recent modeling work shows a “cluster” of these tipping points could be triggered between 1.5°C and 2°C warming (Figure 2), including melting of land and sea ice and changes in highlatitude ocean circulation (deep convection) (Drijfhout et al., 2015). This is consistent with existing observations and understanding that the polar regions are particularly sensitive to global warming and have several potentially imminent tipping points. The Arctic is warming nearly twice as quickly as the global average, which makes the abrupt changes in the Arctic more likely at a lower level of global warming (IPCC, 2013). Similarly, the Himalayas are warming at roughly the same rate as the Arctic and are thus also more susceptible to incremental changes in temperature (UNEP-WMO, 2011). This gives further justifcation for limiting warming to no more than 1.5°C.

While all climate tipping points have the potential to rapidly destabilize climate, social, and economic systems, some are also **self-amplifying feedbacks that once set in motion increase warming in such a way that they perpetuate yet even more warming. Declining Arctic sea ice, thawing permafrost, and the poleward migration of cloud systems are all examples of self-amplifying feedback mechanisms, where initial warming feeds upon itself to cause still more warming acting as a force multiplier (Schuur et al., 2015).**

#### Disease causes extinction – climate change and genomic mutation irreversibly alter ecosystem equilibrium which leads to the emergence of new pathogens

Supriya 4/19 [(Lakshmi Ph.D., worked as part of the R&D group in diverse industries starting with semiconductor packaging at Intel, Arizona, where she developed a new elastomeric thermal solution, which has now been commercialized and is used in the core i3 and i5 processors. From there she went on to work at two startups, one managing the microfluidics chip manufacturing lab at a biotechnology company and the other developing polymer formulations for oil extraction from oil sands. She also worked at Saint Gobain North America, developing various material solutions for photovoltaics and processing techniques and new applications for fluoropolymers. Most recently, she managed the Indian R&D team of Enthone (now part of MacDermid) developing electroplating technologies for precious metals. She has been a freelance science journalist and science writer since 2016 and has written for publications such as The Wire, Science, and New Scientist.) “Humans versus viruses - Can we avoid extinction in near future?” News Medical, 4/19/2021. https://www.news-medical.net/news/20210419/Humans-versus-viruses-Can-we-avoid-extinction-in-near-future.aspx] BC

Expert argues that human-caused changes to the environment can lead to the emergence of pathogens, not only from outside but also from our own microbiome, which can pave the way for large-scale destruction of humans and even our extinction.

Whenever there is a change in any system, it will cause other changes to reach a balance or equilibrium, generally at a point different from the original balance. Although this principle was originally posited by the French chemist Henry Le Chatelier for chemical reactions, this theory can be applied to almost anything else.

In an essay published on the online server Preprints\*, Eleftherios P. Diamandis of the University of Toronto and the Mount Sinai Hospital, Toronto, argues that changes caused by humans, to the climate, and everything around us will lead to changes that may have a dramatic impact on human life. Because our ecosystems are so complex, we don’t know how our actions will affect us in the long run, so humans generally disregard them.

Changing our environment

Everything around us is changing, from living organisms to the climate, water, and soil. Some estimates say about half the organisms that existed 50 years ago have already become extinct, and about 80% of the species may become extinct in the future.

As the debate on global warming continues, according to data, the last six years have been the warmest on record. Global warming is melting ice, and sea levels have been increasing. The changing climate is causing more and more wildfires, which are leading to other related damage. At the same time, increased flooding is causing large-scale devastation.

One question that arises is how much environmental damage have humans already done? A recent study compared the natural biomass on Earth to the mass produced by humans and found humans produce a mass equal to their weight every week. This human-made mass is mainly for buildings, roads, and plastic products.

In the early 1900s, human-made mass was about 3% of the global biomass. Today both are about equal. Projections say by 2040, the human-made mass will be triple that of Earth’s biomass. But, slowing down human activity that causes such production may be difficult, given it is considered part of our growth as a civilization.

Emerging pathogens

Although we are made up of human cells, we have almost ten times that of bacteria just in our guts and more on our skin. These microbes not only affect locally but also affect the entire body. There is a balance between the good and bad bacteria, and any change in the environment may cause this balance to shift, especially on the skin, the consequences of which are unknown.

Although most bacteria on and inside of us are harmless, gut bacteria can also have viruses. If viruses don’t kill the bacteria immediately, they can incorporate into the bacterial genome and stay latent for a long time until reactivation by environmental factors, when they can become pathogenic. They can also escape from the gut and enter other organs or the bloodstream. Bacteria can then use these viruses to kill other bacteria or help them evolve to more virulent strains.

An example of the evolution of pathogens is the cause of the current pandemic, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Several mutations are now known that make the virus more infectious and resistant to immune responses, and strengthening its to enter cells via surface receptors.

The brain

There is evidence that the SARS-CoV-2 can also affect the brain. The virus may enter the brain via the olfactory tract or through the angiotensin-converting enzyme 2 (ACE2) pathway. Viruses can also affect our senses, such as a loss of smell and taste, and there could be other so far unkown neurological effects. The loss of smell seen in COVID-19 could be a new viral syndrome specific to this disease.

Many books and movies have described pandemics caused by pathogens that wipe out large populations and cause severe diseases. In the essay, the author provides a hypothetical scenario where a gut bacteria suddenly starts producing viral proteins. Some virions spread through the body and get transmitted through the human population. After a few months, the virus started causing blindness, and within a year, large populations lost their vision.

Pandemics can cause other diseases that can threaten humanity’s entire existence. The COVID-19 pandemic brought this possibility to the forefront. If we continue disturbing the equilibrium between us and the environment, we don’t know what the consequences may be and the next pandemic could lead us to extinction.

### Solvency

#### Plan: The Federative Republic of Brazil should recognize an unconditional right of workers to strike.

#### The plan revitalizes labor in Brazil and makes a general strike possible

Armengol 15 [(Pedro, Deputy Secretary of Labour Relations with the CUT in Sao Paulo, Brazil.) “The right to strike in the public sector in Brazil,” World PSI, 2/14/15. https://www.world-psi.org/en/right-strike-public-sector-brazil] RR

Workers in the public service in Brazil were not entitled to a collective working relationship with the public administration until the promulgation of the 1988 Constitution. Nor could they: without the right to organise and no right to strike, they could not join trade unions, and thus act jointly or articulate as social partners. They were denied any form of expression of their common interests and desires, as well as the practical means to struggle for them.

The 1988 Constitution no longer regards public sector workers as mere subjects, but as collective actors, able to relate effectively with each other and with third parties, notably with the public administration. However, after the recognition of the trade union rights of public servants, the lack of regulation of the right to collective bargaining and the exercise of the right to strike became apparent, even though it is recognised as a collateral instrument and legitimate tool to regulate working conditions.

At the same time, the right to collective bargaining is addressed in Convention 151 and Recommendation 159 of the International Labour Organisation (‘ILO’), which have already been ratified and approved by the Brazilian National Congress. Convention 151 and Recommendation 159 of the ILO were approved (with reservations) by the Federal Senate of Brazil, and Legislative Decree 206 of 08 April 2010 guarantees the right to strike to civil servants in item VII Article 37 of the Federal Constitution of 1988, but no specific regulation has been adopted, despite the extension of trade union rights and guarantees that earlier were applicable only to the private sector. As a result, public sector workers continue to be denied their full rights.

Two observations should be made in relation to the text of ILO Convention 151. In the first place, the rights laid down in favour of public servants in Brazil have been recognised constitutionally. The second is that the Constitution, which deals with fundamental rights of the individual, has predominance over the legal system, and defines the Supreme Court of Brazil. This should also have an impact on the interpretation of national legislation on the subject, including the application of Law 7,783 / 89 in 2007, which regulates the right to strike in the private sector in Brazil.

In turn, the lack of regulation on the right to strike for public servants also has a severe impact on public service users (citizens who are faced by long strikes). Civil servants are often compelled to return to work on the basis of legal judgments that point to the illegality of the strike, because of the lack of appropriate legal rules. The result is cyclic strike action.

Currently, even with the incorporation into national law of the principles of ILO Convention 151 in Brazilian jurisprudence we can note an excessive restriction of the right to strike of public servants, with judgements that not only expand the list of essential services, but also raise the minimum percentage of service maintenance. This makes it practically impossible for them to exercise the right to strike.

Despite the institutional recognition of the right to strike, workers increasingly organise protests in the form of work stoppages whereas public administrations refuse to negotiate.

On 11 November 2014, the Conservative party of the Brazilian parliament, without any prior dialogue or negotiation with public employees’ organisations, adopted a draft bill that deals with the ‘regulation of the right to strike of public servants’ in the Joint Committee for Federal Law Consolidation and

Regulation of the Constitution. We would like to highlight the following aspects on the aforementioned draft bill:

The draft seeks to restrict the possibility of a general strike. Obviously, trade unions of public servants do not accept this restriction. The workers should define if the shutdown will be partial or total, including by evaluating the characteristics of each activity. If the action is considered urgent, it will be defined by the workers, meeting the minimum attendance percentage. In Brazil, nowadays, even without a regulation in a specific law, unions already exercise this concept with responsibility.

The draft wants to define ‘ways to break strikes’ which entail a clear intervention in the form of organisation and mobilisation dynamics impacting on the principle of freedom and organisational autonomy, constitutionally guaranteed. The strike is not an ‘end’ for the union, but a means and instrument of struggle.

The draft foresees that workers must inform the government at least 10 days before the beginning of the strike. Unions consider that 72 hours is a reasonable time;

The draft defines the strike, ‘as partial paralysis, prescribes non-payment of days off, considers the days on strike not worked, and intends to penalise workers on probation, forcing them to compensate the days not worked so as to complete the service time required by law. For unions, this is the deliberate construction of a precedent to break the strength of joint positions, and opens space for summary dismissals.

The draft requires a minimum attendance percentage ranging from 40 to 60 percent, and at the same time the proposal considers 90 percent of public services as ‘essential services’, that will have to ensure at least 60 percent coverage . This would means the consolidation of the total restriction policy to exercise the right to strike of public employees in Brazil, which for now is recognised in the constitution.

The draft includes the replacement of workers on strike by contract workers. This is an antidemocratic proposal. Depending on the activity, this may be unconstitutional when applied to exclusive state activities which may not be exercised by contract workers, for example fiscal services. Such an attempt already occurred in 2012 in Brazil, when Decree 7777 / 12 was issued and subsequently denounced as an anti-union practice by the ILO.

The draft includes the provision to ‘prohibit conducting strikes sixty days before the elections of the president, governors, senators, state and federal Deputies, Mayors and Councillors’. In a country where we have two elections every two years, this is another intervention in the freedom and autonomy of organisation and struggle of civil servants in Brazil. It is clear that there is no intention on behalf of these law-makers to improve the current system and to favour the resolution of conflicts. At the moment strikes occur in Brazil for lack of space of the treatment and resolution of conflicts, since the claims of workers are treated in a non-uniform way, generating different approaches in relation to identical claims, thus clashing with the constitutional principle of non-discrimination. It is therefore necessary to establish a contractual system, in line with constitutional principles, that foresees the object and scope of legal negotiations, defines the levels of coverage and articulation, the legal effects of the agreements at each level, solutions for deadlocks as well as the definition of possibility and contours of arbitration and / or mediation, and immediate regulation in law according to the principles of C151. This will allow Brazil to depart from an ideological vision that looks at the public servant as a part of a large machine, unable to link his work to the social role. PSI affiliates in Brazil have been campaigning for the implementation of C151 in law for the last 10 years. It is unacceptable that the parliament will now debate further restrictions and anti-union measures that will only further exacerbate social tensions in public services, instead of making a contribution to a social environment of dialogue and negotiation. The case of Brazil shows that the right to strike and the right to collective bargaining are intrinsically linked to each other. There has to be a willingness on behalf of both parties to come to the negotiating table otherwise no results can be achieved. The current situation of cyclic strikes without any clear outcome is detrimental for the workers and to all public service users.

#### Most employees work in the public sector and is key to the economy

Romero 8/26 [(Teresa, author for Statistia) “Brazil: number of employees in the public administration sector 2010-2019” Statistia, 8/26/21. https://www.statista.com/statistics/763742/number-employees-public-administration-sector-brazil/] RR

In 2019, the public administration sector in Brazil employed around 7.75 million people. This represents an increase when compared to the sector's workforce reported in the previous year. During that period, the public administration area ranked second as one of the leading economic sectors in the Portuguese speaking country.

### Framing

**The standard is maximizing expected wellbeing**

**First, pleasure and pain are intrinsically valuable. People consistently regard pleasure and pain as good reasons for action, despite the fact that pleasure doesn’t seem to be instrumentally valuable for anything.**

**Moen 16** [Ole Martin Moen, Research Fellow in Philosophy at University of Oslo “An Argument for Hedonism” Journal of Value Inquiry (Springer), 50 (2) 2016: 267–281] SJDI

Let us start by observing, empirically, that a widely shared judgment about intrinsic value and disvalue is that pleasure is intrinsically valuable and pain is intrinsically disvaluable. On virtually any proposed list of intrinsic values and disvalues (we will look at some of them below), pleasure is included among the intrinsic values and pain among the intrinsic disvalues**.** This inclusion makes intuitive sense, moreover, for there is something undeniably good about the way pleasure feels and something undeniably bad about the way pain feels, and neither the goodness of pleasure nor the badness of pain seems to be exhausted by the further effects that these experiences might have. “Pleasure” and “pain” are here understood inclusively, as encompassing anything hedonically positive and anything hedonically negative.2 The special value statuses of pleasure and pain are manifested in how we treat these experiences in our everyday reasoning about values**.** If you tell me that you are heading for the convenience store, I might ask: “What for?” This is a reasonable question, for when you go to the convenience store you usually do so, not merely for the sake of going to the convenience store, but for the sake of achieving something further that you deem to be valuable**.** You might answer, for example: “To buy soda.” This answer makes sense, for soda is a nice thing and you can get it at the convenience store. I might further inquire, however: “What is buying the soda good for?” This further question can also be a reasonable one, for it need not be obvious why you want the soda. You might answer: “Well, I want it for the pleasure of drinking it.” If I then proceed by asking “But what is the pleasure of drinking the soda good for?” the discussion is likely to reach an awkward end. The reason is that the pleasure is not good for anything further; it is simply that for which going to the convenience store and buying the soda is good.3 As Aristotle observes**:** “We never ask [a man] what his end is in being pleased, because we assume that pleasure is choice worthy in itself.”4 Presumably, a similar story can be told in the case of pains, for if someone says “This is painful!” we never respond by asking: “And why is that a problem?” We take for granted that if something is painful, we have a sufficient explanation of why it is bad. If we are onto something in our everyday reasoning about values, it seems that pleasure and pain are both places where we reach the end of the line in matters of value.

**Moreover, *only* pleasure and pain are intrinsically valuable. All other values can be explained with reference to pleasure; Occam’s razor requires us to treat these as instrumentally valuable.**

**Moen 16** [Ole Martin Moen, Research Fellow in Philosophy at University of Oslo “An Argument for Hedonism” Journal of Value Inquiry (Springer), 50 (2) 2016: 267–281] SJDI

I think several things should be said in response to Moore’s challenge to hedonists. First, **I do not think the burden of proof lies on hedonists to explain why the additional values are not intrinsic values. If someone claims that X is intrinsically valuable, this is a substantive, positive claim, and it lies on him or her to explain why we should believe that X is in fact intrinsically valuable.** Possibly, this could be done through thought experiments analogous to those employed in the previous section. Second, **there is something peculiar about the list of additional intrinsic values** that counts in hedonism’s favor**: the listed values have a strong tendency to be well explained as things that help promote pleasure and avert pain.** To go through Frankena’s list, life and consciousness are necessary presuppositions for pleasure; activity, health, and strength bring about pleasure; and happiness, beatitude, and contentment are regarded by Frankena himself as “pleasures and satisfactions.” The same is arguably true of beauty, harmony, and “proportion in objects contemplated,” and also of affection, friendship, harmony, and proportion in life, experiences of achievement, adventure and novelty, self-expression, good reputation, honor and esteem. Other things on Frankena’s list, such as understanding, **wisdom, freedom, peace, and security, although they are perhaps not themselves pleasurable, are important means to achieve a happy life, and as such, they are things that hedonists would value highly.** **Morally good dispositions and virtues, cooperation, and just distribution of goods and evils, moreover, are things that, on a collective level, contribute a happy society, and thus the traits that would be promoted and cultivated if this were something sought after.** To a very large extent, the intrinsic values suggested by pluralists tend to be hedonic instrumental values. Indeed, pluralists’ suggested intrinsic values all point toward pleasure, for while the other values are reasonably explainable as a means toward pleasure, pleasure itself is not reasonably explainable as a means toward the other values. Some have noticed this. Moore himself, for example, writes that though his pluralistic theory of intrinsic value is opposed to hedonism, its application would, in practice, look very much like hedonism’s: “Hedonists,” he writes “do, in general, recommend a course of conduct which is very similar to that which I should recommend.”24 Ross writes that “[i]t is quite certain that by promoting virtue and knowledge we shall inevitably produce much more pleasant consciousness. These are, by general agreement, among the surest sources of happiness for their possessors.”25 Roger Crisp observes that “those goods cited by non-hedonists are goods we often, indeed usually, enjoy.”26 What Moore and Ross do not seem to notice is that their observations give rise to two reasons to reject pluralism and endorse hedonism. The first reason is that if **the suggested non-hedonic intrinsic values are potentially explainable by appeal to just pleasure and pain** (which, following my argument in the previous chapter, we should accept as intrinsically valuable and disvaluable), **then—by appeal to Occam’s razor—we have at least a pro tanto reason to resist the introduction of any further intrinsic values and disvalues. It is ontologically more costly to posit a plurality of intrinsic values and disvalues, so in case all values admit of explanation by reference to a single intrinsic value and a single intrinsic disvalue, we have reason to reject more complicated accounts.** **The fact that suggested non-hedonic intrinsic values tend to be hedonistic instrumental values does not, however, count in favor of hedonism solely in virtue of being most elegantly explained by hedonism; it also does so in virtue of creating an explanatory challenge for pluralists.** The challenge can be phrased as the following question: **If the non-hedonic values suggested by pluralists are truly intrinsic values in their own right, then why do they tend to point toward pleasure and away from pain?**27

**Moral uncertainty means preventing extinction should be our highest priority.  
Bostrom 12** [Nick Bostrom. Faculty of Philosophy & Oxford Martin School University of Oxford. “Existential Risk Prevention as Global Priority.” Global Policy (2012)]  
These reflections on **moral uncertainty suggest** an alternative, complementary way of looking at existential risk; they also suggest a new way of thinking about the ideal of sustainability. Let me elaborate.¶ **Our present understanding of axiology might** well **be confused. We may not** nowknow — at least not in concrete detail — what outcomes would count as a big win for humanity; we might not even yet **be able to imagine the best ends** of our journey. **If we are** indeedprofoundly **uncertain** about our ultimate aims,then we should recognize that **there is a great** option **value in preserving** — and ideally improving — **our ability to recognize value and** to **steer the future accordingly. Ensuring** that **there will be a future** version of **humanity** with great powers and a propensity to use them wisely **is** plausibly **the best way** available to us **to increase the probability that the future will contain** a lot of **value.** To do this, we must prevent any existential catastrophe.

**Reducing the risk of extinction is always priority number one.   
Bostrom 12** [Faculty of Philosophy and Oxford Martin School, University of Oxford.], Existential Risk Prevention as Global Priority.  Forthcoming book (Global Policy). MP. http://www.existenti...org/concept.pdfEven if we use the most conservative of these estimates, which entirely ignores the   possibility of space colonization and software minds, **we find that the expected loss of an existential   catastrophe is greater than the value of 10^16 human lives**.  **This implies that the expected value of   reducing existential risk by a mere one millionth of one percentage point is at least a hundred times the   value of a million human lives.**  The more technologically comprehensive estimate of 10  54 humanbrain-emulation subjective life-years (or 10  52  lives of ordinary length) makes the same point even   more starkly.  Even if we give this allegedly lower bound on the cumulative output potential of a   technologically mature civilization a mere 1% chance of being correct, we find that the expected   value of reducing existential risk by a mere one billionth of one billionth of one percentage point is worth   a hundred billion times as much as a billion human lives. **One might consequently argue that even the tiniest reduction of existential risk has an   expected value greater than that of the definite provision of any ordinary good, such as the direct   benefit of saving 1 billion lives.**  And, further, that the absolute value of the indirect effect of saving 1  billion lives on the total cumulative amount of existential riskâ€”positive or negativeâ€”is almost   certainly larger than the positive value of the direct benefit of such an action.