

Towards a new industrial policy

The United States
economic policy agenda
post-COVID-19

Raquel Artecona
Helvia Velloso

Thank you for your interest in this ECLAC publication



Please register if you would like to receive information on our editorial products and activities. When you register, you may specify your particular areas of interest and you will gain access to our products in other formats.



www.cepal.org/en/publications



www.cepal.org/apps

SERIES

STUDIES AND PERSPECTIVES

22

**ECLAC OFFICE
IN WASHINGTON, D.C.**

Towards a new industrial policy

The United States economic policy agenda
post-COVID-19

Raquel Artecona
Helvia Velloso



**COVID-19
RESPONSE**

This document was prepared by Raquel Artecona, Officer in Charge, and Helvia Velloso, Economic Affairs Officer of the office in Washington, D.C. of the Economic Commission for Latin America and the Caribbean (ECLAC). Matthew Diaz, Public Policy Fellow, and María de Lourdes Despradel Aquino, Intern, at the ECLAC office in Washington, D.C., contributed to this report.

The views expressed in this document, which has been reproduced without formal editing, are those of the authors and do not necessarily reflect the views of the Organization or the countries it represents. Unless otherwise indicated, the cut-off date for the information used to prepare this report is 16 August 2022.

United Nations publication
ISSN: 1728-5437 (electronic version)
ISSN: 1727-9909 (print version)
LC/TS.2022/152
LC/WAS/TS.2022/3
Distribution: L
Copyright © United Nations, 2022
All rights reserved
Printed at United Nations, Santiago
S.22-00907

This publication should be cited as: R. Artecona and H. Velloso, "Towards a new industrial policy: the United States economic policy agenda post-COVID-19", *Studies and Perspectives series-ECLAC Office in Washington, D.C.*, No. 22 (LC/TS.2022/152-LC/WAS/TS.2022/3), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), 2022.

Applications for authorization to reproduce this work in whole or in part should be sent to the Economic Commission for Latin America and the Caribbean (ECLAC), Documents and Publications Division, publicaciones.cepal@un.org. Member States and their governmental institutions may reproduce this work without prior authorization, but are requested to mention the source and to inform ECLAC of such reproduction.

Contents

Abstract	5
List of acronyms	7
Introduction	9
I. President Biden’s Build Back Better Agenda	13
A. The American Rescue Plan Act	16
1. Direct relief to individuals.....	18
2. State and local government aid	19
3. Mixture of tax credits, business assistance, and public health spending.....	19
B. The American Jobs Plan	20
C. The American Families Plan	21
D. The Infrastructure Investment and Jobs Act	24
E. A two-track effort and the Inflation Reduction Act of 2022	25
1. The Build Back Better bill	27
2. The Inflation Reduction Act of 2022	28
II. Addressing supply chain bottlenecks	33
A. The role of the federal government	34
B. Task Force to tackle near-term bottlenecks.....	35
C. Buy American.....	35
D. The 2022 strategy to address supply chain disruptions.....	36
III. Investing in innovation and competitiveness	39
A. The CHIPS and Science Act of 2022.....	40
B. Executive Order on “Promoting Competition in the American Economy”	43
Conclusion	45

Bibliography	47
Annexes	53
Annex 1 The United States Innovation and Competition Act (USICA) of 2021	54
Annex 2 America COMPETES Act of 2022.....	56
Annex 3 America COMPETES Act vs USICA	59
Studies and Perspectives Series-Washington, D.C.: issues published	61

Tables

Table 1 Estimated deficit impact of major COVID relief United States legislation (2020).....	16
Table 2 Summary of federal expenditures under the American Rescue Plan Act.....	17
Table 3 Spending by category under the American Jobs Plan	20
Table 4 Provisions in the American Families Plan	22
Table 5 What is in the Infrastructure Investment and Jobs Act.....	25
Table 6 Inflation Reduction Act of 2022 - Summary.....	28
Table 7 CHIPS and Science Act of 2022: key authorized programs	41
Table 8 CHIPS and Science Act of 2022: CBO cost estimate	42

Figures

Figure 1 United States: manufacturing share of GDP from 1980 to 2021.....	14
Figure 2 United States: productivity and hourly compensation from 1948 to 2018.....	14
Figure 3 United States: labor force participation rate from 1980 to 2021.....	15
Figure 4 Breakdown of the American Rescue Plan Act	18
Figure 5 Breakdown of the American Jobs Plan.....	21
Figure 6 Breakdown of the American Families Plan.....	23
Figure 7 Breakdown of the Inflation Reduction Act of 2022.....	30
Figure A1 United States Innovation and Competition Act breakdown	56

Boxes

Box 1 Key climate measures of the Inflation Reduction Act of 2022.....	29
Box 2 Academic research on the state of competition in the United States economy	43

Abstract

This document examines the United States economic policy agenda proposed by President Joe Biden following his inauguration in January 2021, the discussions in the United States Congress since then, and the resulting legislations that have been signed into law. It also details government efforts to address supply chain bottlenecks and legislative efforts to pass a unified bill on increasing innovation and strengthening competitiveness. Four major legislations –the American Rescue Plan Act, the Infrastructure Investment and Jobs Act, the CHIPS and Science Act, and the Inflation Reduction Act– were signed into law as a result. The last three together suggest that the United States government appears to be moving towards a new industrial policy, focused on semiconductors and defense technology, and on clean energy.

Build Back Better and the ensuing debate around its related policies have sought to address the structural challenges that have long afflicted the United States economy, and the need to achieve a more equitable recovery following the impact of the COVID-19 pandemic. They reflect a change in public attitudes in the United States about what role the government should take in the economy, which the pandemic contributed to reinforce. This change has taken place over time in the context of a secular decline in the manufacturing share of GDP, stagnant wages, and rising inequality. Behind this shift in public policy focus are also economic studies that have pointed to the benefits of public spending, especially aid to families and children.

List of acronyms

ACA	Affordable Care Act
AFP	American Families Plan
AJP	American Jobs Plan
API	Active Pharmaceutical Ingredients
ARPA	American Rescue Plan Act
B3W	Build Back Better World
CARES	Coronavirus Aid, Relief, and Economic Security Act
CBO	Congressional Budget Office
CDCTC	Child and Dependent Care Tax Credit
CHIPS	Creating Helpful Incentives to Produce Semiconductors for America
COMPETES	Creating Opportunities for Manufacturing Pre-Eminence in Technology and Economic Strength
COP27	27 th Conference of the Parties to the United Nations Framework Convention on Climate Change
CRFB	Committee for a Responsible Federal Budget
CTC	Child Tax Credit
DARPA	Defense Advanced Research Projects Agency
DFC	United States International Development Finance Corporation
DOC	Department of Commerce
DOE	Department of Energy
EBT	Electronic Benefit Transfer
EIDL	Economic Injury Disaster Loan
EITC	Earned Income Tax Credit
EO	Executive Order
EXIM	Export-Import Bank of the United States
FAR	Federal Acquisition Regulatory Council
FEMA	Federal Emergency Management Agency
FFCRA	Families First Coronavirus Response Act
GDP	Gross Domestic Product

GSA	General Services Administration
HBCU	Historically Black Colleges and Universities
IJA	Infrastructure Investment and Jobs Act
INFRA	Infrastructure for Rebuilding America
IP	Industrial Production
IRS	Internal Revenue Service
KFF	Kaiser Family Foundation
MSIs	Minority Serving Institutions
NASA	National Aeronautics and Space Administration
NDAA	National Defense Authorization Act
NIST	National Institute of Standards and Technology
NSF	National Science Foundation
NTIA	National Telecommunications and Information Administration
OMB	Office of Management and Budget
ORAN	Open Radio Access Network (or Open RAN)
PFML	Paid Family and Medical Leave
PPP	Paycheck Protection Program
PPPHCE	Paycheck Protection Program and Health Care Enhancement Act
RAISE	Rebuilding American Infrastructure with Sustainability and Equity
R & D	Research and Development
SNAP	Supplemental Nutrition Assistance Program
STEM	Science, technology, engineering and mathematics
TAA	Trade Adjustment Assistance
TCJA	Tax Cuts and Jobs Act
TCUs	Tribal Colleges and Universities
UI	Unemployment Insurance
UNCTAD	United Nations Conference on Trade and Development
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USICA	United States Innovation and Competition Act
USTR	United States Trade Representative
WDR	Western Drought Resilience

Introduction

In the United States, the COVID-19 pandemic contributed to reinforce a change in public attitudes, about what role the government should take in the economy. An NBC News poll conducted in April 2021 highlighted this change in attitudes over the past thirty years. In December 1995, the pollsters asked “Some people think the government is trying to do too many things that should be left to individuals and businesses. Others think that government should do more to solve our country’s problems. Which comes closer to your view?” Just 32% of respondents then agreed that the government should “do more”. In April 2021, 55% of respondents agreed with “do more” (NBC News April Poll, p.9). Although these answers correspond to very different economic contexts –1995 experienced healthy economic growth while in April 2021 the United States economy was still recovering from the devastation of the global pandemic– the trend seemed indicative of a change in attitudes.

When President Biden signed into law the American Rescue Plan Act (ARPA) on 11 March 2021, an economic stimulus and COVID-19 relief bill, polling by Politico/Morning Consult conducted from 6-8 March 2021 found 75% of registered voters either strongly or somewhat supporting the whole bill. A poll conducted by the Kaiser Family Foundation (KFF) in March 2021, showed that “a majority of the public, including at least half of Republicans, approve two provisions currently included in the COVID-19 relief bill aimed at expanding health insurance coverage for Americans.” This contrasts with the public views on the Affordable Care Act (ACA) passed in 2010, when a large share of the public had an unfavorable opinion of the law (in April 2010, 46% viewed the law favorably, while 40% viewed it unfavorably, according to the KFF). However, the ACA is shown drawing majority approval in the March 2021 KFF Health Tracking poll: 54% had a favorable view while 39% had an unfavorable view.

This change in attitudes over time has taken place in the context of a secular decline in the manufacturing share of GDP, stagnant wages, and rising inequality in the United States. Together, these trends have contributed to pushing economic policy towards a reorientation, with five key issues underlying this shift (Tett, 2021):

1. There is now broad recognition that the fruits of a free-market economy have been unevenly distributed, hence the steep rise in inequality. This has led to an increasing focus on **inclusion** in the design of economic policies.

2. There is also an acknowledgement that globalization and free-market competition create efficiencies as well as vulnerabilities. The pandemic, as well as the war in Ukraine, revealed critical supply chain vulnerabilities in key sectors of the global economy. As the benefits and costs of globalized supply chains are assessed, including whether producers and consumers have become overly exposed to a few suppliers, building **resilience** has become a policy priority.

3. The exposure of such vulnerabilities in the global supply chains, and the multiple calls for diversifying them, brought an even bigger focus on China's rising role in the world economy. As a result, there has been wide consensus among United States policymakers on the need to design policies and pass legislation with a focus on accelerating **innovation** and strengthening **competitiveness**.

4. Given the threat of pandemics, as well as climate change, a reset of the relationship between business and government is also underway, leading to an emphasis on **partnerships** as a framework to meet collective challenges.

5. Finally, acknowledging that the challenges of the future are global in nature and cannot be solved locally, there is also increasing focus on building **preparedness** for future shocks.

The COVID-19 pandemic, the war in Ukraine, and the threat posed by future pandemics and climate change on the global economy, have created an unusual level of economic and policy uncertainty. In addition, the rise in inflation—which at 8.5% in July 2022 was well above the Federal Reserve's average 2% target—has further complicated policy trade-offs. This backdrop of uncertainty is leading to vigorous debates on how to answer to global challenges and how to prepare for future shocks.

A broader question given the current backdrop is whether a different philosophy of government is taking hold in the United States. Mainstream economists have historically questioned the idea of 'picking winners', arguing that government intervention is likely to encourage firms that could not economically justify their own investment, or to expand profit margins of those that could succeed on their own. In other words, that free markets are more efficient in the allocation of scarce resources. However, the endorsement of large-scale efforts to build up certain industries or sectors like the production of semiconductors (Creating Helpful Incentives to Produce Semiconductors for America (CHIPS) Act), large capacity batteries and electric vehicles, critical minerals and materials, and pharmaceuticals and active pharmaceutical ingredients (API), is a deviation from the free markets and trade policy traditionally embraced by the United States. So is the use of government procurement to provide an incentive for the private sector to invest in manufacturing, as recommended by the White House report "100-day review under Executive Order 14017" and supported by the Executive Order 14005 ("Made in America").

These efforts suggest a different way of looking at economic policy. When adding the three major legislations passed in the past year—the Infrastructure Investment and Jobs Act (IIJA), the CHIPS and Science Act, and the Inflation Reduction Act (IRA)—the United States government appears to be moving towards a new industrial policy, not only focused on semiconductors and defense technology, but also on clean energy.

The idea that the government could act as a coordinator and catalyzer of public and private initiatives to help facing the collective challenges posed by climate change and technological development, as well as inequality, seems to be what President Joe Biden was seeking with his Build Back Better agenda. The economic proposals that were put forward as part of his agenda had a "whole-of-government" approach, which refers to the joint activities performed by diverse ministries, public administrations, and public agencies to provide a common approach to problems. These original policy

proposals, and how they have fared in the United States Congress, will be examined in this report, which is organized as follows.

Part I focuses on President Biden's Build Back Better agenda, whose implementation followed a two-track effort –the bipartisan effort on traditional infrastructure, and the use of the budget reconciliation process to pass the parts of the agenda without bipartisan support– with the goal to meet most of the proposed agenda. It led to three major legislations: the IIJA, passed with bipartisan support and signed into law in November 2021, and the ARPA and the IRA, passed through the budget reconciliation process and signed into law in March 2021 and August 2022, respectively.

Part II describes government efforts to address supply chain bottlenecks by leveraging the government's role as a market actor, as well as to regulate federal government procurement practices to strengthen manufacturing production and employment.

In Part III, bipartisan legislation in the Senate and in the House of Representatives that led to the CHIPS and Science Act, signed into law in August 2022, and the Administration efforts towards accelerating innovation and strengthening competitiveness in the United States, are examined in the context of China's growing role as a world power.

In the final section some concluding remarks are offered, highlighting that the policy proposals under debate in the past year and a half have sought to address many of the structural challenges that have long afflicted the United States economy over the past several decades.

I. President Biden's Build Back Better Agenda

The scope of the COVID-19 pandemic was unprecedented in the modern era. So was the United States government's policy response. The United States borrowed, lent, and spent trillions of dollars to keep the economy from plunging further than it did and to accelerate recovery.¹ These actions were at the center of the unusual nature of both the pandemic recession and the recovery. Against this backdrop, the trend in public attitudes towards accepting and even wanting a more active government was accelerated, paving the way for a rethinking of government's role in the United States economy.

Behind this shift in attitudes over time is the steep decline in the manufacturing sector's share of the United States Gross Domestic Product (GDP) since the 1980s (figure 1). The downward revision of the path of industrial production (IP) in the five years from 2016 to 2021 (Federal Reserve, 2021) the largest revision in recent history, further deepened the decades-long decline in U.S. manufacturing as a share of GDP.² Moreover, the 2021 revision to IP figures suggests that the trade and tax policies aimed at stopping the manufacturing decline during this period did not succeed in achieving their main goal.³

Slow wage growth and rising inequality, which has become the norm over the last 40 years, is another trend behind this shift in public attitudes. Since 1979, inflation-adjusted hourly pay for most American workers has diverged from economywide productivity, and this divergence is at the root of numerous economic challenges. After tracking rather closely in the three decades following World War II, growing productivity and typical worker compensation diverged. From 1979 to 2018, productivity

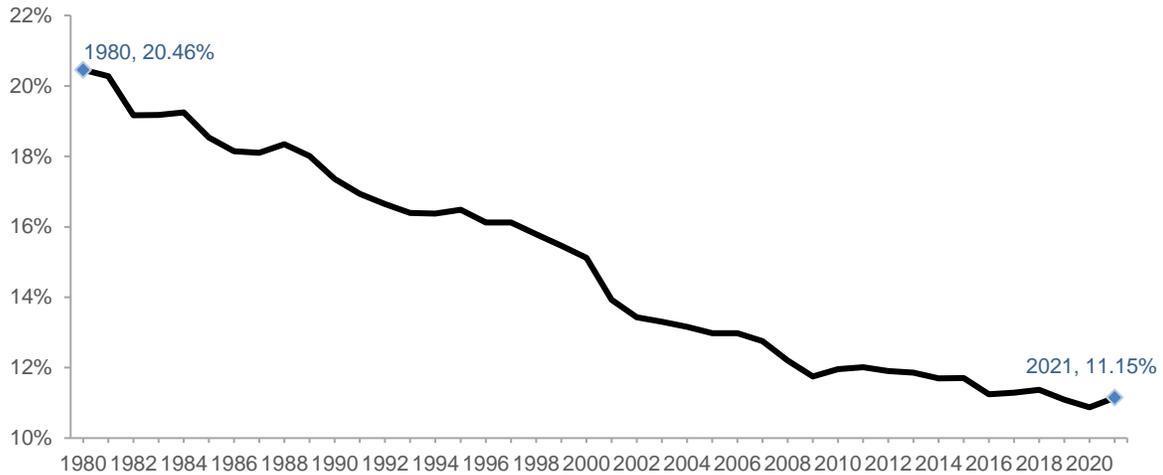
¹ The Committee for a Responsible Federal Budget (2021a) estimates the net impact on the federal deficit of the US\$ 5.9 trillion of enacted COVID relief as US\$ 5.2 trillion, with US\$ 3.6 trillion committed or disbursed over the one-year period beginning in April 2020. These figures do not include the US\$ 3.3 trillion the Federal Reserve spent to stabilize the economy, largely through the purchase of assets to inject liquidity into markets. Such purchases have almost doubled the size of the Federal Reserve's balance sheet, but do not add to the federal deficit.

² Annual industrial production revisions incorporate detailed manufacturing data from the Census Bureau and other manufacturing surveys. According to the revised figures, IP from 2016 to 2021 grew only 11 basis points per year, where it previously was thought to have grown 93 basis points per year.

³ IP downgrades are largest between 2017 and 2019, when the United States-China trade war escalated and global IP growth slumped, and in the manufacturing sector (Guo, Foley, and Schwartz, 2021).

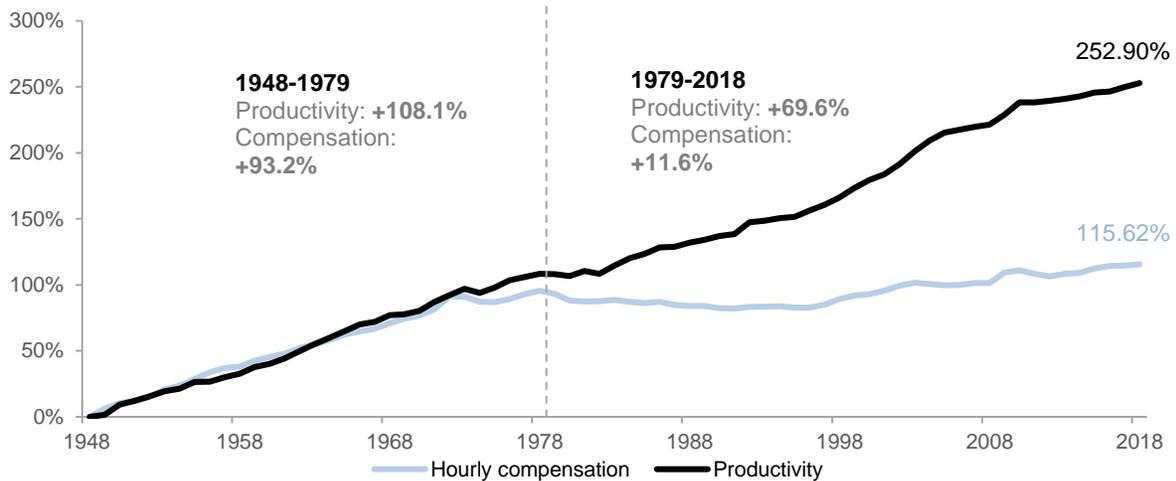
grew 69.6%, while hourly compensation of production and nonsupervisory workers grew just 11.6%. Productivity thus grew six times as fast as typical worker compensation (figure 2).

Figure 1
United States: manufacturing share of GDP from 1980 to 2021
(Annual percentage)



Source: Elaborated by authors, based on data from the United States Bureau of Economic Analysis.

Figure 2
United States: productivity and hourly compensation from 1948 to 2018
(Cumulative percentage since 1948)

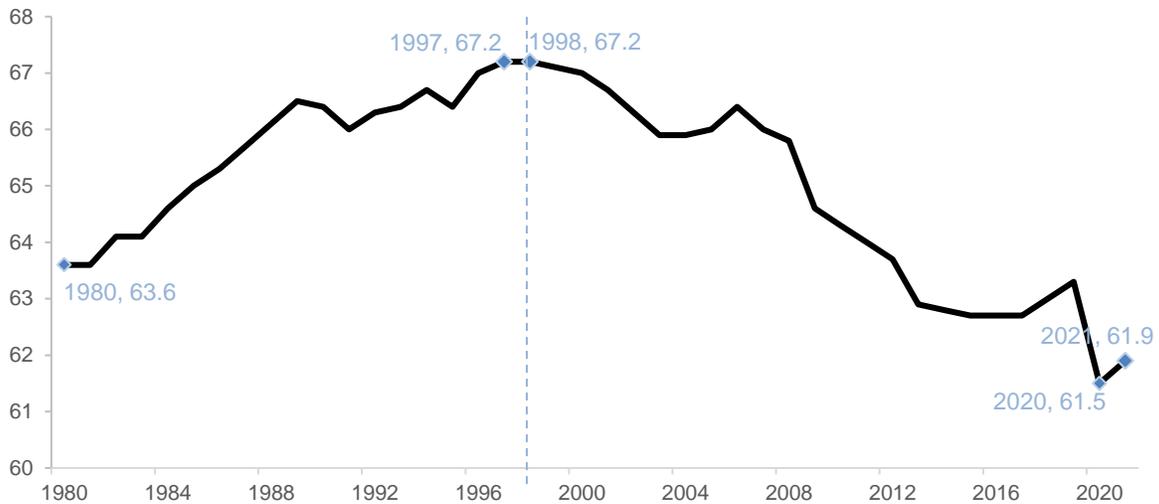


Source: Economic Policy Institute (2020). EPI analysis of unpublished Total Economy Productivity data from the Bureau of Labor Statistics (BLS) Labor Productivity and Costs program and EPI analysis of wage data from BLS Current Employment Statistics, BLS Employment Cost Trends, BLS Consumer Price Index, and Bureau of Economic Analysis National Income and Product Accounts.

Note: Data are for compensation (wages and benefits) of production/nonsupervisory workers in the private sector and for net productivity of the total economy. "Net productivity" is the growth of output of goods and services less depreciation per hour worked.

Participation in the labor force has also been declining in the United States, another adverse trend and structural economic challenge. Both in December 2020 and December 2021 the labor force participation rate was lower than in December 1980. Most of the decline took place in the 2000s, after a peak was reached during the dot-com bubble in the late 1990s. The rate decline means that millions of potential workers are missing from the labor force, contributing to reduce the size of the economy (figure 3).

Figure 3
United States: labor force participation rate from 1980 to 2021
(Percentage in December)



Source: Elaborated by authors, based on data from the United States Bureau of Labor Statistic

The current United States Administration, when it took office in January 2021, committed to spend US\$ 1.9 trillion for immediate COVID-19 relief (the American Rescue Plan, which was signed into law in March 2021), US\$ 2.3 trillion for investment in infrastructure, and US\$ 1.8 trillion for welfare and education. This amounts to about US\$ 6 trillion, or nearly 30% of the United States GDP.

President Biden's first budget request mapped out this vision of an expansive federal government in the years to come, with increased spending in areas like infrastructure, education, and climate change. The US\$ 6 trillion plan for the 2022 fiscal year, released at the end of May 2021, provided a detailed accounting of the President's economic agenda. It included two proposals that he put before Congress: the American Jobs Plan (AJP), which called for new spending on the nation's infrastructure, and the American Families Plan (AFP), which addressed issues related to welfare and education such as childcare, universal prekindergarten, and paid family and medical leave. Overall, the AJP and AFP were estimated to add a cumulative 5.3% to the level of United States GDP during 2022-24 (Hodge and Lin, 2021). According to Treasury Secretary Janet Yellen, in testimony before the Senate Finance Committee in June 2021, the Administration's budget proposal for fiscal year 2022 would help unwind destructive trends such as wage inequality and falling labor-force participation.

Debate regarding the President's AJP led to a Bipartisan Infrastructure Framework agreed between a group of bipartisan senators and the White House, which led to the Infrastructure Investment and Jobs Act (IIJA), signed into law by the President on 15 November 2021. The United States Senate also passed the United States Innovation and Competition Act of 2021 (USICA) in June 2021, with a focus on investing in innovation and increasing the United States' competitiveness, while the House of Representatives passed the America COMPETES Act of 2022 on the same issues in February 2022. Reconciling the two versions into a unified bill proved difficult, but at the end of July 2022 the Senate and the House passed the Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act of 2022, with provisions to boost domestic production of computer chips, invest into workforce training and basic science research, and support the manufacturing sector. It was signed into law on 9 August 2022.

Regarding the rest of the President Biden's proposed agenda, the United States Congress passed the Inflation Reduction Act of 2022 through the budget reconciliation process (explained in section E) in

the first weeks of August 2022, a historic bill that raises revenue and lower prescription drug costs to fund energy, climate and health care provisions. The Senate and the House of Representatives passed the legislation on 7 and 12 August, respectively, and the President signed it into law on 16 August.

Finally, the President has also signed executive orders on the priorities of his agenda, focusing on spurring competition, improving workers' bargaining power and on infrastructure. Overall, all these proposals, which will be described in the following sections, aim to further inclusion, strengthen economic and social resilience, and accelerate competitiveness, while building partnerships and preparedness.

A. The American Rescue Plan Act

The American Rescue Plan Act of 2021 (ARPA) is an economic stimulus bill passed by the 117th United States Congress and signed into law by President Joe Biden on 11 March 2021.⁴ It provides a total of US\$ 1.9 trillion in mandatory funding, program changes and tax policies aimed at mitigating the continuing effects of the pandemic. The ARPA builds upon previously enacted aid measures.

Before the ARPA's enactment, COVID relief came from four pieces of legislation implemented in 2020 —the Families First Coronavirus Response Act (FFCRA) signed into law on 18 March 2020, the Coronavirus Aid, Relief, and Economic Security (CARES) Act signed into law on 27 March 2020, the Paycheck Protection Program and Health Care Enhancement (PPHCE) Act signed into law on 24 April 2020, and the end of year stimulus relief (Response and Relief Act) that was part of the Consolidated Appropriations Act, 2021, signed into law on 27 December 2020. Of the US\$ 3.4 trillion in relief from those four bills, US\$ 1.9 trillion results from the CARES Act, US\$ 915 billion from the Response and Relief Act, and the remaining US\$ 580 billion comes from the other two bills (table 1).

Table 1
Estimated deficit impact of major COVID relief United States legislation (2020)
(Billions of dollars)

	FFCRA	CARES	PPHCE	Response & Relief	Total
Small business support ^a	-	375	255	300	935
Unemployment benefits	5	460	-	120	590
Recovery rebates	-	290	-	165	460
Health care spending	90	160	100	70	420
State and local aid ^b	85	190	-	85	360
Tax relief	25	265	-	40	330
Other Spending	20	170	-	135	325
Total COVID Relief (Net Cost)	225	1,915	355	915	3,415

Source: Committee for a Responsible Federal Budget (2021b).

Note: rounded to nearest US\$ 5 billion. Totals may not sum due to this rounding.

^aThe Committee assumes the Paycheck Protection Program (PPP) from the CARES Act cost based on its initial score and allocate all returned or unused funds to the PPHCE.

^bIncludes Coronavirus Relief Fund money and funding for public schools, transit, and existing Medicaid costs

The ARPA's goal, following these four previous bills, was to speed up the United States' recovery from the economic and health effects of the COVID-19 pandemic. The expenditures in the bill can be roughly divided into three equal parts (Yaros, 2021b): direct relief to individuals; state and local

⁴ The bill was passed through the budget reconciliation process, which provides a procedural path around the supermajority requirement in the Senate. For a detailed discussion of the process, see section E of this document.

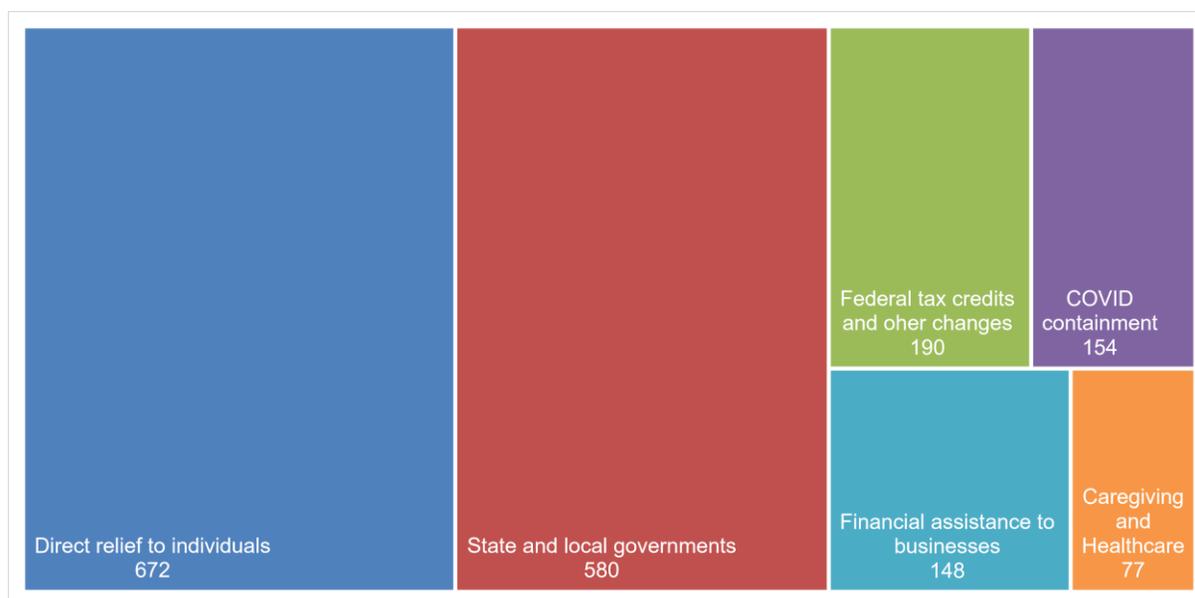
government aid; and a mixture of personal tax cuts, business assistance, and public health spending, among others (see table 2 and figure 4).

Table 2
Summary of federal expenditures under the American Rescue Plan Act
(Billions of dollars)

	Estimated cost (2021-2031) (Billions of dollars)
Federal expenditures on social benefits (relief to individuals)	671.5
Stimulus checks (of as much as US\$ 1,400 per person)	410.6
Additional unemployment insurance	205.1
Rental, homeowner and other housing assistance	38.6
Nutrition assistance	15.2
Other aid to workers and families	2.0
Federal Funding for state and local governments	580.2
Funding for K-12, higher education and remote learning	178.1
Coronavirus state and local fiscal relief funds	350.0
Federal Transit Administration grants	27.9
Medicaid	18.2
Other funding to state and local governments	6.1
Expansion of federal tax credits and other changes	190.3
Child Tax Credit	109.9
Premium Tax Credit	45.0
Earned Income Tax	25.8
COBRA continuation coverage	9.9
Employee Retention Credit	8.8
Dependent Care Assistance	8.1
Credits for Paid Sick and Family Leave	5.2
Other tax changes	-22.3
Federal nondefense appropriations (COVID containment)	154.4
Testing, vaccines, therapeutics and emergency medical supplies	72.5
FEMA	47.0
Public health	28.7
Other nondefense appropriations	6.2
Financial assistance to businesses	148.3
Assistance to some financial troubled employer pensions	58.1
Support for restaurants and shuttered venues	26.3
Targeted EIDL advance, PPP modifications	22.3
Air carrier payroll support program extension and airport relief	20.0
Other financial assistance	21.7
Caregiving and Healthcare	76.6
Child and elder care	53.3
Other healthcare and worker health benefits	23.3
Total	~1,900.0

Source: Yaros (2021b), based on data from the Congressional Budget Office (CBO) and the Joint Committee on Taxation (JCT).
Note: EIDL - Economic Injury Disaster Loan; PPP - Paycheck Protection Program.

Figure 4
Breakdown of the American Rescue Plan Act
(Estimated cost (2021-2031) in billions of dollars)



Source: Elaborated by authors, based on data from table 2.

1. Direct relief to individuals

Individuals were the biggest beneficiaries of the ARPA, receiving US\$ 672 billion in direct relief. The largest source of household income support in the Act was a third round of stimulus checks of as much as US\$ 1,400 per person, costing US\$ 410 billion. The stimulus payments phased out for single filers with incomes between US\$ 75,000 and US\$ 80,000 and for joint filers with incomes between US\$ 150,000 and US\$ 160,000.

Close to 80% of these stimulus checks were distributed in the second half of March, adding an annualized US\$ 3.8 trillion to nominal personal income that month. According to the Committee for a Responsible Federal Budget (CRFB) based on data from the United States Bureau of Economic Analysis, nominal disposable income grew 10.6%, or US\$ 1.8 trillion, from the twelve months before April 2020 to the twelve months through April 2021. By comparison, income grew by an average of 5% per year over the prior three years—despite those years having much stronger overall economic growth.⁵

The ARPA extended unemployment insurance (UI) enhancements through 6 September 2021. These included: a US\$ 300 federal supplement on top of regular state benefits, additional weeks of UI after standard benefits were exhausted, and expanded eligibility to include those who didn't normally qualify such as gig-economy workers. The cost of the extension of these enhancements was roughly US\$ 200 billion. Individuals also benefited from US\$ 39 billion in rental, homeowner, and other housing support and US\$ 15 billion in nutrition assistance, among other smaller provisions.

⁵ On a month-to-month basis, COVID relief contributed to temporarily boost income to new records, amidst a pandemic. Disposable income in March 2021 was 30% higher than in February of 2020. Total March income of US\$ 1.8 trillion (US\$ 21.9 trillion annualized) included US\$ 335 billion in recovery rebates, US\$ 40 billion from expanded unemployment benefits, US\$ 12 billion in personal income from the Paycheck Protection Program, and US\$ 5 billion from other COVID-relief measures. Another US\$ 5 billion in base unemployment benefits was enough to bring base income (excluding direct COVID relief but not its economic impact) to roughly pre-pandemic levels (and 4% above the average over the prior year). See Committee for a Responsible Federal Budget (2021a).

2. State and local government aid

State and local governments were the next largest beneficiaries, receiving US\$ 580 billion in federal funding. Of this total amount, US\$ 350 billion took the form of direct federal aid, while another US\$ 178 billion was targeted to K-12 schools, higher education institutions, and remote learning investments. The remaining funds included increased federal matching funds to cover the cost of Medicaid, as well as transportation grants.

3. Mixture of tax credits, business assistance, and public health spending

The assortment of expenditures that made up the third part of the ARPA included a series of tax changes in expanded tax credits for families, workers and employers (US\$ 190 billion). The one-year expansion and broadening of the Child Tax Credit (CTC) accounted for half of the overall tax credit expansion. For the 2021 tax year, the ARPA increased the CTC from US\$ 2,000 to a fully refundable US\$ 3,600 per child 5 years old and younger and to US\$ 3,000 per child between 6 and 17 years old; the age of eligible children was raised to 17 from 16. The fact that the credit was made fully refundable meant those who may owe little or no federal tax, including many low-income households, could now receive the full amount. The goal was to combat child poverty and turn lump-sum annual tax refunds into predictable household income.

The first monthly payments of the expanded CTC started on 15 July 2021, with the Internal Revenue Service (IRS) issuing payments totaling US\$ 15 billion and reaching families with nearly 60 million children. The CTC expansion was supposed to cover an estimated 88% of the United States' children and lift more than 5 million of them above the poverty line according to the United States Treasury. Out of all the substantial poverty reduction policies in the ARPA, the expanded CTC by itself was estimated to cut child poverty by more than 40% (Miller, 2021).

Other than the CTC, a fifth of the tax credit expansion was attributable to the premium tax credit, which lowered out-of-pocket premiums for lower-income individuals acquiring health insurance through the marketplaces established under the Affordable Care Act. The ARPA would increase the premium tax credit for most people who qualified and expand eligibility to people with incomes greater than 400% of the federal poverty line through 2022 (Levits and Meuse, 2021). The Congressional Budget Office (CBO) estimated this provision would reduce the number of people without health insurance by 1.3 million in 2022.

The remainder of the tax credit expansion included modifications and extensions to the Earned Income Tax Credit, Employee Retention Credit, and credits for paid sick and family leave, among others. The Tax Policy Center estimated that two-thirds of the benefits from many of these expanded tax credits, plus the US\$ 1,400 stimulus checks, would go to low-and middle-income households earning about US\$ 91,000 or less.

Besides personal tax cuts, other expenditures included in the Act could be divided into three parts. The first was US\$ 154 billion in federal nondefense appropriations, which ranged from COVID-19 testing, vaccines and other public health investments to additional funds for the Federal Emergency Management Agency (FEMA) to address major disasters and cover funeral expenses related to the pandemic. The second was US\$ 148 billion in financial assistance to businesses, which included small business aid, targeted relief to restaurants, airlines and others, and support for financially troubled employer pension plans. The third was US\$ 77 billion in additional funds for healthcare and caregiving, which included most notably childcare grants.

Finally, the change in public attitudes towards bigger government support offered a supportive backdrop for the ARPA's passage. A Monmouth University poll taken in late February 2021 found more than 60% of Americans supported the US\$ 1.9 trillion plan. Quinnipiac University also found in a poll released in the same month that Americans overwhelmingly supported US\$ 1,400 stimulus payments, with 78% in favor and only 18% opposed. There were some critics of the legislation's largesse, who blamed it for contributing to the overheating of the economy and accelerating inflation in the second half of the year.

B. The American Jobs Plan

At the end of March 2021, after the ARPA was signed into law, President Biden unveiled the second part of his Build Back Better Agenda –the American Jobs Plan (AJP)– an infrastructure plan centered on upgrading and repairing the United States physical infrastructure, investing in manufacturing, research and development, and expanding long-term health care services. The President cast his plan as a fundamental shift in economic thought away from the small-government, tax-cutting approach embraced since the 1980s. “Here is the truth: we all do better when we all do well,” Mr. Biden said, arguing that the pandemic had exposed longstanding inequalities in the country. “It’s time to build our economy from the bottom up and from the middle up, not the top down,” he added (The White House, 2021f).

The infrastructure plan as proposed by the President would cost roughly US\$ 2.3 trillion over eight years and be paid for over 15 years by raising the corporate tax rate to 28% from 21% and increasing taxes on companies’ foreign earnings (what the Administration called a “Made in America Corporate Tax Reform Plan”). While the ARPA was paid for by an increase in borrowing, the rest of the Build Back Better agenda would be fully paid so that it would not add to the deficit in the long run, although there would be a temporary impact on the deficit since spending would occur in the first 8 years and repayment in 15 years.

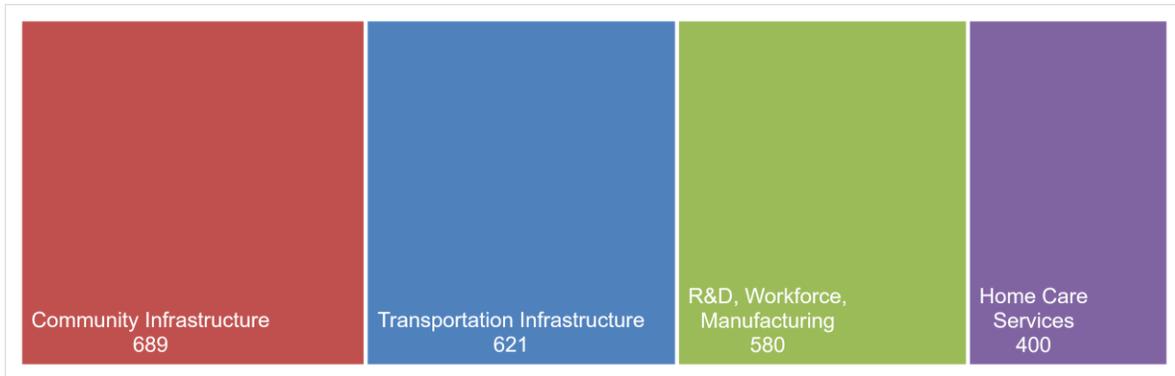
The largest share of the proposed investments (US\$ 1.3 trillion) would go toward infrastructure spending on two fronts: transportation and community, to build, repair, and upgrade highways; provide affordable housing; build new schools; and more. The plan also would allocate US\$ 580 billion for research and development, workforce development, and manufacturing, and US\$ 400 billion to support home- and community-based care for the elderly and disabled. The American Jobs Plan thus proposed a heavy investment in traditional transportation infrastructure along with a whole series of less traditional community infrastructure projects. Table 3 and figure 5 provide a snapshot of areas covered by the American Jobs Plan.

Table 3
Spending by category under the American Jobs Plan
(Billions of dollars)

Categories	Billions of dollars
Transportation Infrastructure	621
Highways, bridges, roads	115
Public transit	85
Rail	80
Electric vehicles	174
Airports, water transit	42
Transportation inequities	45
Infrastructure	50
Other misc. programs	30
Community Infrastructure	689
Clean drinking water	111
Broadband	100
Electric	100
Housing	213
Schools and VA (veterans) hospitals	137
Other misc. programs	28
R&D, Workforce, Manufacturing	580
Research & development	180
Manufacturing	300
Workforce development	100
Home Care Services	400
Home/community-based care	400
Total	2,290

Source: Probasco (2021), The White House (2021e).

Figure 5
Breakdown of the American Jobs Plan
(Billions of dollars)



Source: Elaborated by authors, based on data from table 3.

The plan, which would require Congressional approval, called for modernizing 20,000 miles of roadway; building 500,000 electric vehicle charging stations; replacing the country's existing lead pipes and service lines; repairing aging schools; expanding home care for the elderly and disabled; and investing heavily in domestic semiconductor manufacturing. It also included mandating that more of the country's electricity be generated from low-carbon sources, with a goal of eliminating carbon emissions from the power grid by 2035. It stressed equity in access to jobs and transportation options, including US\$ 20 billion for a new program that would reconnect neighborhoods cut off by past transportation investments as well as research funding for historically black colleges and universities (HBCU). The plan called for a national climate-focused laboratory to be affiliated with an HBCU.

Regarding the plan's impact on the deficit, the Committee for a Responsible Federal Budget (2021c) said the plan's new costs would be concentrated over the next eight years. Over the traditional 10-year budget window, they estimated the net increase in the deficit would be approximately US\$ 900 billion. Over 15 years, the plan appeared deficit-neutral and it would reduce deficits over the long-term. To offset the cost of the new proposals, the American Jobs Plan included several tax increases on corporations. The plan would raise the corporate rate, raise the minimum tax rate on the foreign income of U.S. corporations, and impose a new corporate minimum tax, among other changes. The Committee found these provisions would fully offset the bill's cost within the next 15 years, enough to pay for the new investment being proposed, albeit over a longer period than the spending itself.

The plan's rollout ignited negotiations between the White House and Capitol Hill, which led to a Bipartisan Infrastructure Framework that was agreed to by a bipartisan group of senators in June, and the passage of the Infrastructure Investment and Jobs Act in the Senate in August. It passed the House on 5 November and was signed into law on 15 November 2021. The framework and the Act are discussed in detail in section D.

C. The American Families Plan

On 28 April 2021, President Biden introduced the third part of his Build Back Better agenda –the American Families Plan (AFP). The first, the ARPA, was billed as an emergency pandemic aid bill that mostly focused on direct financial infusions to individuals and state and local governments along with funding for the vaccine rollout and other healthcare provisions, as described in section A. The second, the AJP, was presented as an infrastructure plan and dealt with physical infrastructure, as well as broadband and nontraditional infrastructure like elder care and electric vehicles, as described in section B. It led to the bipartisan Infrastructure Investment and Jobs Act that was signed into law in November 2021.

The final of the three plans, the AFP, included provisions for universal preschool, two years of free community college, paid family and medical leave, an extension of the expanded Child Tax Credit (CTC) first passed in the ARPA, as well as extensions for the Earned Income Tax Credit (EITC) and the Child and Dependent Care Tax Credit (CDCTC), in addition to other programs. It would also extend provisions of the ARPA, such as expanded health insurance tax credits to provide premium relief.

The AFP was estimated to cost approximately US\$ 1.8 trillion over ten years. It would offer US\$ 1 trillion in investments and US\$ 800 billion in tax cuts to families and workers. To offset the cost, the plan included several tax increases on households making US\$ 400,000 per year or more, as well as a boost in funding to the Internal Revenue Service (IRS) meant to improve enforcement and close the tax gap. According to estimates provided by the White House, these offsets would not cover the entire cost of the bill over the ten-year window, resulting in an overall deficit increase of approximately US\$ 300 billion over ten years (table 4). In combination with the AJP, the Administration said the plan would be fully offset over 15 years, however.

Table 4
Provisions in the American Families Plan
(Billions of dollars)

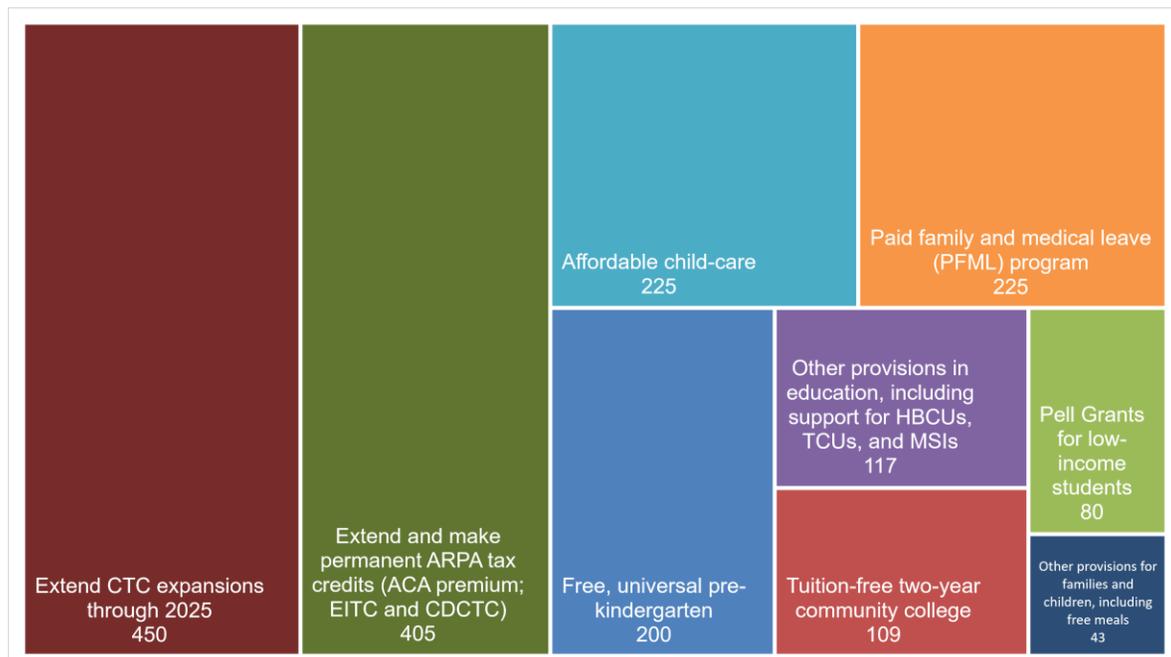
Categories	10-year estimate
Education	506
Free, universal pre-kindergarten for all three- and four-year-olds	200
Tuition-free two-year community college	109
Increase Pell Grants for low-income students	80
Invest in evidence-based strategies to strengthen completion and retention rates at community colleges and institutions that serve students from our most disadvantaged communities	62
Provide two years of subsidized tuition for students from families earning less than US\$125,000 enrolled in a four-year HBCU, TCU, or MSI	39
Funding to train, equip, and diversify American teachers	9
Expand existing institutional aid grants to HBCUs, TCUs, and MSIs	5
Provide funds for building a pipeline of skilled health care workers with graduate degrees	2
Families and Children	495
Make childcare affordable, invest in high-quality care, and fund training for childcare providers	225
Create a national comprehensive paid family and medical leave program	225
Expand summer Electronic Benefit Transfer (EBT) to all eligible children nationwide	25
Expand free meals for children in the highest poverty districts	17
Launch a healthy foods incentive demonstration program	1
Facilitate re-entry for formerly incarcerated individuals through SNAP eligibility	unknown
Work with Congress to automatically adjust length and size of unemployment benefits based on economic conditions	n/a
Expanded Tax Credit Extensions	855
Extend the Child Tax Credit (CTC) expansions from the ARPA through 2025 and make the CTC permanently fully refundable	450
Extend the ARPA expanded Affordable Care Act (ACA) premiums tax credits	200
Make the ARPA Earned Income Tax Credit (EITC) expansion for childless workers permanent	125
Make the ARPA Child and Dependent Care Tax Credit (CDCTC) expansion permanent	80
Possible Interactions and Estimating Differences	up to -50
Sub-Total, Spending and Tax Credits	~1,800
Reduce the Tax Gap	-700
Increase funding for IRS enforcement	80
Improve tax enforcement through audits, IT, information reporting for financial institutions, regulating paid preparers, and other measures	-780 ^a
Increase Taxes on High-Income Households	-800
Increase capital gains and dividends taxes (tax as ordinary income above US\$1 million, eliminate step-up basis above US\$1 million, close carried interest and real estate loopholes)	-400
Apply 3.8% Medicare tax to all income above US\$400,000	-200
Increase top individual tax rate from 37% to 39.6%	-100
Permanently extend the current limitation in place that restricts large, excess business losses	-100
Sub-Total, Tax Increases and Enforcement	-1,500
Ten-Year Deficit Impact	~\$300 billion

Sources: Committee for a Responsible Federal Budget (2021d), The White House (2021f). CRFB calculations based on Congressional Budget Office data. HBCUs - Historically Black Colleges and Universities; TCUs - Tribal Colleges and Universities; MSIs - Minority Serving Institutions. ^aThis represents an Administration estimate and has not been independently scored or estimated.

According to the Administration, the economic recovery should aim to help the country bounce back from COVID-19, but also to build up a "fair return" that emphasizes equal opportunity. As the statement on the Build Back Better plan put it, "President Biden believes this is no time to just build back to the way things were before, with the old economy's structural weaknesses and inequalities still in place. This is the moment to reimagine and rebuild an American economy for our families and the next generation" (The White House, 2021b).

The AFP emphasized "making it easier for American families to break into the middle class and easier to stay in the middle class" (The White House, 2021g). The details of the plan included funding for expanding education to build up the workforce, especially US\$ 109 billion for free community college (which would be available for those in the country under the Development, Relief, and Education for Alien Minors Act), an additional investment of more than US\$ 80 billion in Pell Grants, and US\$ 200 billion for prekindergarten for all three and four-year-olds. Additionally, it made provisions for US\$ 62 billion for "evidence-based strategies" to increase retention and completion rates in community colleges (which included mental health, childcare services, and mentoring), as well as US\$ 46 billion for colleges that have historically served minorities, and US\$ 9 billion for training and diversifying American grade schoolteachers (figure 6).

Figure 6
Breakdown of the American Families Plan
(Billions of dollars)



Source: Elaborated by authors, based on data from table 4. HBCUs – Historically Black Colleges and Universities; TCUs – Tribal Colleges and Universities; MSIs – Minority Serving Institutions. ACA – Affordable Care Act; EITC – Earned Income Tax Credit; CDCTC – Child and Dependent Care Tax Credit.

The plan also included funds for *family support*. A further US\$ 17 billion would expand the school meals programs in high-poverty areas, and another US\$ 25 billion would be invested in expanding Electronic Benefit Transfer (EBT) programs nationwide, which make subsidized or free meals available for low-income families during the summer. It would also remove the drug-related felony restriction for benefits from the Supplemental Nutrition Assistance Program (SNAP), which the Administration said disproportionately harmed Black communities due to sentencing disparities.

The AFP also offered *workforce support*, seeking to create a national comprehensive paid family and medical leave (PFML) program that would guarantee 12 weeks of paid leave.⁶ Other notable aspects of the plan included subsidized childcare along with investments in the care workforce—and enhanced ACA subsidies. Also included in the plan: more tax credits for workers, extending the CTC increase until 2025 (and making it permanently fully refundable), and reforms to the unemployment system.

D. The Infrastructure Investment and Jobs Act

The negotiations regarding the proposed AJP led to a bipartisan infrastructure agreement that was reached between the White House and a group of Republican and Democratic senators on 24 June 2021. The bipartisan framework focused on traditional infrastructure investment items such as roads, bridges, and rail, along with broadband internet and water systems, leaving out other key elements of the President's original plan.

According to the White House fact sheet, “the US\$ 1.2 trillion Bipartisan Infrastructure Framework is a critical step in implementing President Biden’s Build Back Better vision. The Plan makes transformational and historic investments in clean transportation infrastructure, clean water infrastructure, universal broadband infrastructure, clean power infrastructure, remediation of legacy pollution, and resilience to the changing climate. Cumulatively across these areas, the Framework invests two-thirds of the resources that the President proposed in his American Jobs Plan” (The White House, 2021j).

The White House said the proposed deal involved US\$ 579 billion in new spending; when combined with the renewal of existing funding for infrastructure, the total would come to US\$ 973 billion over the next five years, and US\$ 1.2 trillion over the next eight years (The White House, 2021h).

The Framework, which would generate significant economic benefits and returns according to the parties involved, was to be financed through a combination of closing the tax gap, redirecting unspent emergency relief funds, targeted corporate user fees, and the macroeconomic impact of infrastructure investment. The bipartisan group agreed to cover the cost with unspent money from previous rounds of pandemic-related stimulus measures, an increase in the IRS’s capacity to enforce tax laws, and sales from the Strategic Petroleum Reserve.

However, the plan to reinforce the IRS’s capacity of enforcement proved to be an issue of contention for the broader Senate and was removed as a source of revenue. There was also further debate over how much to increase public-transit funding.

Following more than a month of negotiations, the United States Senate approved the bipartisan infrastructure plan on 10 August 2021 as the Infrastructure Investment and Jobs Act (IIJA). The 69-30 votes for approval provided momentum for this first phase of President Biden’s Build Back Better priorities, and the legislation headed to the House of Representatives, where it passed by a 228-to-206 vote on 5 November 2021. Thirteen Republicans and all but six of the House Democrats voted for the bill. The President signed it into law on 15 November 2021.

The measure costs US\$ 1.2 trillion, containing US\$ 550 billion in new spending over five years in addition to current federal authorizations for public works, a potentially historic expenditure the President has put on par with the building of the transcontinental railroad or interstate highway system. There is money to rebuild roads and bridges, and to shore up coastlines against climate change, protect public utility systems from cyberattacks and modernize the electric grid. Public transit gets resources, as do airports and freight rails. There are resources for electric car charging stations and zero-emission school buses (table 5).

⁶ Currently, only nine states have—or will have—PFML.

Table 5
What is in the Infrastructure Investment and Jobs Act
(Billions of dollars)

	Bipartisan Framework	IJJA
Total	579	553
Transportation	312	284
Roads and bridges	109	110
Highway and Pedestrian Safety	11	11
Public transit	49	39
Passenger and Freight Rail	66	66
Electric Vehicle infrastructure	7.50	7.50
Electric buses / transit	7.50	7.50
Reconnecting communities	1	1
Airports	25	25
Ports & Waterways	16	17
Infrastructure Financing	20	0
Other Infrastructure	266	269
Water infrastructure (especially pipes)	55	55
Broadband infrastructure	65	65
Environmental remediation	21	21
Power infrastructure incl. grid authority	73	73
Western Water Storage	5	8
Resilience	47	47

Source: The White House (2021h and 2021m) and news articles, including The Washington Post, The New York Times, the Wall Street Journal and the Financial Times.

The spending is mostly paid for without raising taxes. The bulk of the funding comes from repurposing unspent coronavirus relief money (US\$ 200 billion) and from certain states returning unused unemployment insurance supplement funds (US\$ 50 billion). It also relies on a series of other smaller measures, including delaying Medicare rebates that are expected to save another US\$ 50 billion, tightening enforcement on reporting gains from cryptocurrency investments (about US\$ 30 billion), as well as sales of spectrum and oil from the Strategic Petroleum Reserve (US\$ 87 billion). Nearly US\$ 60 billion is expected to come from economic growth spurred by the spending in the bill. According to the Congressional Budget Office (CBO), the bill would add about US\$ 256 billion to the debt over the next decade, although supporters of the bill say the CBO has not considered all of the offsets identified by lawmakers, including the positive effects of the economic growth this bill would generate. The bipartisan infrastructure legislation still allowed Democrats to proceed with a “budget reconciliation” bill on the other elements addressed in the AJP and the AFP that had been left out.

E. A two-track effort and the Inflation Reduction Act of 2022

Aiming to maintain a delicate agreement with Republicans regarding the infrastructure deal, while simultaneously moving forward with the other priorities of President Biden’s Build Back Better agenda, Senate Democrats on the Senate Budget Committee reached an agreement in mid-July 2021 on the cost of an antipoverty, education and climate plan, the first step before other committees could draft the details of the legislation to be passed through a budget reconciliation process. Budget reconciliation was viewed as key to President Biden achieving as much of his Build Back Better agenda as possible with only a majority of 51 votes in the Senate instead of the usual 60.

Budget reconciliation provides a fast-track process for consideration of bills to implement the policy choices embodied in the annual congressional budget resolution, regarding taxes, spending, and

the debt limit. Only policies that change spending or revenues can be included. Senate debate time is limited, and only certain kinds of amendments can be offered.⁷

In its annual budget resolution, the United States Congress sets total spending, revenues, the surplus or deficit, and the public debt. The budget may also include reconciliation instructions. These instructions direct one or more committees to recommend changes to existing law to achieve specified changes in spending, revenues, deficits, and/or the debt limit.

In the Senate, the resulting reconciliation bill incorporating those proposals is considered under expedited procedures that limit debate and amendments. Like the budget resolution, a reconciliation bill cannot be filibustered⁸ in the Senate and therefore needs only a simple majority to move to a final vote. However, there are limitations on the substance of what can be included in a reconciliation bill, although a 60-vote majority in the Senate can override any objections.

A budget resolution for the 2021 fiscal year began to be considered by the 117th United States Congress in February 2021. As appropriations for the fiscal year had already been approved, the budget resolution's main purpose was to begin the budget reconciliation process to allow the American Rescue Plan Act of 2021 to be passed without the possibility of being blocked by a filibuster. The United States Congress, under usual practice, could consider two reconciliation bills in calendar year 2021 (Wessel, 2021b): one for fiscal year 2021 (which ended 30 September 2021) and another for fiscal year 2022 (which ends 30 September 2022). The Congressional Research Service has divided the reconciliation process into five stages (Yaros, 2021a):

- Stage 1 – House and Senate adopt a budget resolution including reconciliation instructions to individual committees.
- Stage 2 – Committees draft legislation in response to reconciliation instructions. They then submit their recommendations to their respective Budget Committee, which combines the responses into a single budget reconciliation bill before putting the measure up for floor consideration.
- Stage 3 – The reconciliation bill is considered on the floor by both chambers of Congress. If the House and Senate end up approving distinct versions of a reconciliation bill, lawmakers must then resolve the differences.
- Stage 4 – Differences resolved between chambers (most commonly via creation of a conference committee).
- Stage 5 – Reconciliation bill enacted into law or vetoed.

On 11 August 2021, Senate Democrats approved a US\$ 3.5 trillion budget blueprint for their antipoverty, education and climate plan, with the Senate voting 50-49 to adopt the resolution. It was the first step toward bypassing the 60-vote threshold required to pass most legislations in the Senate.

The agreed US\$ 3.5 trillion in spending and tax credits –which the lawmakers hoped to offset with tax increases on corporations and high-income households and savings elsewhere– would determine the specific policy priorities that Democrats could fit into the final budget reconciliation legislation.⁹

⁷ Since 1980, Congress has sent 26 reconciliation measures to the President –4 bills were vetoed and 22 enacted– primarily legislation that reduced the deficit through cuts in mandatory spending or increases in revenues (House Committee on the Budget, 2021, p. 4). The 22 bills enacted included such significant pieces of legislation as major deficit reduction bills in the 1980s and 1990s, welfare reform in 1996, the Bush tax cuts in 2001 and 2003, the Trump tax cuts in 2017, and the ARPA under Joe Biden (Wessel, 2021b).

⁸ In the United States Senate, a filibuster is a tactic employed by opponents of a proposed law to prevent the measure's final passage. The Senate rules permit senators to speak for as long as they wish, and on any topic they choose, until "three-fifths of the Senators duly chosen and sworn" (currently 60 out of 100) vote to close debate by invoking cloture under Senate Rule XXII. The most common form of filibuster occurs when one or more senators attempt to delay or block a vote on a bill by extending debate on the measure.

⁹ The number marked a middle ground between the US\$ 6 trillion and the roughly US\$ 2 trillion figure sought at opposite ends of the Democrats spectrum. See The Wall Street Journal (2021).

The legislation being prepared was expected to include federal paid family and medical leave, subsidized childcare, and extension of an expanded CTC, universal prekindergarten for three and four-year-olds and affordable housing, among other issues. It would also extend expanded ACA subsidies approved earlier in the year in the ARPA, and broaden Medicare benefits to cover dental, vision and hearing – and would aim to reduce the cost of prescription drugs by allowing Medicare to negotiate prices, among other steps.

The plan would also try to address climate change through a series of proposals, including tax credits for clean energy investments and a clean electricity standard, aimed at reducing carbon emissions in the electricity sector by 80% and economywide by 50% by 2030. The plan proposed polluter import fees, a tax on imports from countries that lack aggressive climate change policies. Such fees could help lower emissions globally while generating revenues for the United States, effectively acting as an emissions-based tariff.

Democrats needed to pass identical budget resolutions in both the House and the Senate. The budget resolution faced amendment votes in the Senate and was passed with Democrats unified behind it before it moved to the House. On 24 August 2021, the House passed a measure approving the US\$ 3.5 trillion budget resolution.¹⁰ This was a needed step before committees could start crafting the details of the legislation within the overall framework. This step, which corresponded to stage 1, allowed the reconciliation process to move forward.

1. The Build Back Better bill

House and Senate Democrats began difficult negotiations in the following weeks but were not able to coalesce behind the US\$ 3.5 trillion number and the plans to pay for it. Following negotiations, the price was lowered to approximately US\$ 2.2 trillion. The Build Back Better bill was passed 220–213 by the House of Representatives on 19 November 2021 but had a difficult path in the Senate. Its most significant provisions included:

- US\$ 555 billion to fight climate change, which the White House hoped would allow the President to deliver on his goal to halve carbon emissions by 2030.
- US\$ 400 billion for universal pre-K, which the White House has called the largest expansion in education programs since the creation of public high school.
- US\$ 200 billion for child tax credits, granting a one-year extension of the pandemic-era child tax credit.
- US\$ 200 billion for four weeks of paid leave.¹¹
- US\$ 165 billion to reduce health care premiums under the Affordable Care Act and expand Medicare coverage to include hearing benefits.
- US\$ 150 billion to expand affordable home care, providing funding for a Medicaid program that supports in-home health care.
- US\$ 150 billion for affordable housing, going towards building more than 1 million new rental and single-family homes.

¹⁰ The measure approved by the House on 24 August also included a commitment that the House would consider the bipartisan infrastructure bill that passed the Senate by 27 September 2021.

¹¹ The United States is one of few industrialized nations without a national paid leave program for new parents. According to the Bureau of Labor Statistics, as of March 2021, just 23% of civilian workers in the U.S. had access to paid family leave and 89% had access to unpaid family leave (Time, 2021).

2. The Inflation Reduction Act of 2022

After a year of frustrated efforts to pass a broader package, on 7 August 2022, the Senate passed through the budget reconciliation process the Inflation Reduction Act (IRA) of 2022, spending over US\$ 400 billion dollars on climate and healthcare programs while raising taxes on large, profitable companies and reducing federal deficits cumulatively by more than US\$ 300 billion over the next decade. It was passed by the House five days later and signed into law on 16 August 2022.

The legislation offers tax incentives for reducing carbon emissions, seeks to allow Medicare to negotiate the price of some prescription drugs, allots roughly US\$ 80 billion to the Internal Revenue Service (IRS) and extends subsidies for health insurance under the Affordable Care Act (ACA). After eyeing as much as US\$ 3.5 trillion in spending on a series of programs in the beginning of the discussions in 2021 –including childcare, community college and family paid leave– agreement was reached on a fraction of that.

The IRA uses two main levers: new incentives for private industry to produce more renewable energy, and other incentives for households to change their energy use and consumption. It raises an estimated US\$ 737 billion over the next decade through higher taxes on large corporations and wealthy individuals and lower Medicare prescription drug costs, to pay for an estimated US\$ 437 billion in tax breaks and additional government spending to address climate change and pay for lower health insurance premiums for individuals benefiting from the ACA. The remaining more than US\$ 300 billion goes to reducing the federal government's future budget deficits (table 6).

Table 6
Inflation Reduction Act of 2022 - Summary
(Billions of dollars)

TOPLINE ESTIMATES	
Total Revenue	737
15% corporate minimum tax	222 ^a
Prescription Drug Pricing Reform	265 ^c
IRS Tax Enforcement	124 ^b
1% Stock Buybacks Fee	74 ^a
Loss Limitation extension	52 ^a
Total Investments	437
Energy Security and Climate Change	369 ^a
Affordable Care Act Extension	64 ^b
Western Drought Resiliency	4 ^c
Total Deficit Reduction	300+

Source: Inflation Reduction Act: Summary (2022), democrats.senate.gov.

^aJoint Committee on Taxation estimate

^b Congressional Budget Office (CBO) estimate. IRS funding provision involves an US\$ 80 billion expenditure over ten years, which the CBO estimates will yield US\$ 204 billion in additional revenue for a net saving of US\$ 124 billion.

^c Senate estimate, awaiting final CBO score

The Inflation Reduction Act addresses three areas: climate change, healthcare, and budget deficit reduction. The bulk of the investments, costing an estimated US\$ 369 billion over ten years, are directed toward promoting clean energy and climate resiliency. Two-thirds of this amount is in the form of federal tax credits that extend, enhance or create incentives to produce electricity from clean energy sources, invest in renewable energy technologies, and address climate change through carbon sequestration, renewable fuel production, and clean energy manufacturing, besides other key climate measures included in this bill. These tax expenditures will also lower the cost to households and businesses of investing in energy efficiency and purchasing electric vehicles (box 1).

Box 1**Key climate measures of the Inflation Reduction Act of 2022**

1. Methane penalty: US\$ 900 per metric ton of methane emissions that exceed federal limits in 2024, rising to US\$ 1,500 per metric ton in 2026
2. Carbon capture and storage tax credit of US\$ 85 per metric ton, up from US\$ 50
3. US\$ 30 billion for solar panels, wind turbines, batteries, geothermal plants and advanced nuclear reactors, including tax credits over 10 years. Replaces short-term wind and solar credits
4. US\$ 27 billion for 'green bank' to support clean energy projects particularly in disadvantaged communities
5. US\$ 20 billion to cut emissions in the agriculture sector
6. US\$ 9 billion in rebates for individuals buying and retrofitting homes with energy-efficient and electric appliances
7. US\$ 60 billion to support low-income communities and communities of color, includes grants for zero-emissions technology and vehicles, highway pollution mitigation, bus depots and other infrastructure located near disadvantaged communities
8. US\$ 10 billion in investment tax credits to build manufacturing facilities that make electric vehicles and renewable energy technologies
9. Tax credit of up to US\$ 7,500 for the purchase of new clean vehicles and offers for the first time a credit of US\$ 4,000 for used electric vehicles for households with maximum income of US\$ 150,000 a year.

Source: Williams (2022).

The investments in clean energy in the legislation include US\$ 27 billion for a Clean Energy and Sustainability Accelerator, commonly referred to as a green bank, which would leverage public and private funds to invest in clean-energy technologies and infrastructure. In states where green banks have already been established, public money has been used to leverage six to twenty times more dollars in private investment in clean energy. It also includes about US\$ 20 billion for agricultural conservation and US\$ 5 billion to safeguard forests around the country, according to the Congressional Research Service. Farms cover roughly 40% of the United States and agriculture accounts for about 11% of its greenhouse gas emissions (Jones, 2022).

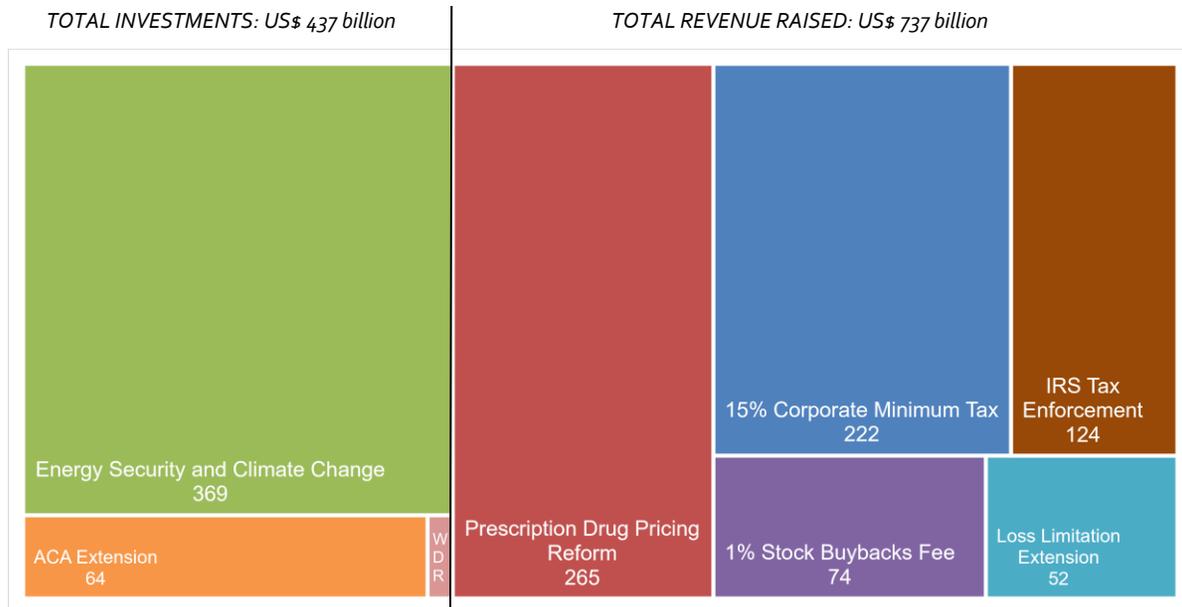
The IRA also extends enhancements of the ACA provided in last year's pandemic relief package, the ARPA. The ARPA extended eligibility for the premium tax credits to individuals with incomes above 400% of the federal poverty level to purchase health insurance on ACA marketplaces. The law also increased the size of premium subsidies, thereby reducing or eliminating out-of-pocket premium for millions of ACA enrollees. These enhancements to the premium tax credits were going to expire at the end of 2022, but the IRA extended them through 2025 at an estimated 10-year cost of US\$ 64 billion.

The investments in the IRA would be offset with an estimated US\$ 737 billion in additional revenue and savings over a decade. This includes roughly US\$ 265 billion for various reforms to reduce prescription drug costs¹², US\$ 222 billion from imposing a 15% minimum tax on corporate book income that would affect larger corporations, US\$ 124 billion from reducing the tax gap through stronger Internal Revenue Service (IRS) enforcement, a 1% excise tax on stock repurchases (which had been included in the House-passed Build Back Better Act from November 2021), and US\$ 52 billion in loss limitation extension¹³ (figure 7).

¹² Penalties on manufacturers for exceeding inflation would apply to drugs sold to Medicare, and there is a US\$ 2,000 annual out-of-pocket cap on drug costs and free vaccines for Medicare beneficiaries.

¹³ Under rules enacted as part of the Tax Cuts and Jobs Act (TCJA), when business owners report losses, they cannot use these losses to offset more than US\$ 250,000 of their non-business income (or \$500,000 of non-business income in the case of married couples). This prevents high-income taxpayers from deducting business losses that exist on paper only to reduce the other income they report to the IRS. The limit on pass-through losses was set to expire with most of the other TCJA personal income tax changes after 2025. The CARES Act suspended it for 2020 and retroactively for 2018 and 2019. The ARPA extended it for one year, through 2026. The IRA would extend it for another two years.

Figure 7
Breakdown of the Inflation Reduction Act of 2022
(Billions of dollars)



Source: Elaborated by authors, based on data from table 7. WDR=Western Drought Resilience (US\$ 4 billion).

The Committee for a Responsible Federal Budget (CRFB) has estimated the proposal would generate some deficit reduction up front and substantial savings over time. With interest, the proposal could save close to US\$ 100 billion per year by 2032. Although reconciliation was designed for deficit reduction, this is the first time in many years it was actually used for this purpose. It is also the largest deficit reduction bill since the Budget Control Act of 2011 (Committee for a Responsible Federal Budget, 2022b).

Many independent analyses are now taking place to evaluate the impact of the IRA. According to one of them, the legislation is expected to speed the transition to clean technology so much that non-polluting energy—solar, wind, nuclear power, geothermal energy, hydropower—could supply up to 81% of the United States' electricity by the end of this decade (Welch, 2022).

Some of the biggest hurdles to the investment in renewable energy sources envisioned in the IRA are bottlenecks in the permitting and siting of transmission lines. It is common for such projects to encounter local opposition and take sometimes more than a decade to build. Democrats in the Senate have said the agreement they reached to pass the legislation "calls for a comprehensive Permitting reform legislation to be passed before the end of the fiscal year. Permitting reform is essential to unlocking domestic energy and transmission projects, which will lower costs for consumers and help us meet our long-term emissions goals" (Inflation Reduction Act: Summary, 2022).

There has been debate about what this legislation means for inflation, given its name. According to Marc Goldwein, senior policy director for the CRFB, there are three ways in which the legislation will fight inflation, which together should push in the direction of disinflation (Zhou, 2022):

1. It will take money out of the economy, both by taxing it and by spending less on prescription drugs.
2. Regulatory reforms within the package will tend to increase supply and availability of energy, reduce cost, and actually put downward pressure on inflation.
3. Microeconomic effects: lower costs everyday individuals face for prescription drugs, health care premiums on the market exchange, and for energy, will help fight inflation persistence.

The Penn Wharton budget model (Penn Wharton, 2022) estimates that the IRA would have no meaningful effect on inflation in the near term but would reduce inflation by around 0.1 percentage points by the middle of the first decade. Moody's, in a recent report evaluating the macroeconomic effects of the legislation, estimates the IRA would reduce the United States inflation, as measured by the Consumer Price Index, by 3.3 basis points per year on average over the next 10 years. Also, the legislation is estimated to add 2 basis points per year to real GDP growth on average during the same period (Zandi, Yaros, and Lafakis, 2022).

This impact may seem small, but Mr. Goldwein argues that if you combine the first effect on demand (taking money out of the economy, a macroeconomic effect), which was the focus of the studies, with the other two effects on supply and on price at the microeconomic level as listed above, the impact on inflation may be more significant than the macroeconomic numbers imply and will make it easier for the Federal Reserve to do its job of bringing down inflation.

Another Moody's cross-sector analysis of the IRA says the legislation has the potential to improve long-term inflation dynamics and, together with the recently enacted CHIPS Act (discussed in Part III D of this document), help the economy better withstand future supply-side shocks. "The bill will likely help keep supply constraint-driven inflation in check over the medium-term by bringing about productivity-enhancing investments" (Moody's 2022, p.1).

The IRA's passage brought the discussions of the Build Back Better agenda to a conclusion, although provisions addressing childcare, home care services, community college, paid family leave and the child tax credit were left out of the final legislation. Many lawmakers have said they will keep trying to include paid family leave and childcare subsidies in future legislative efforts.

Finally, another focus of the Build Back Better agenda as it was initially proposed was to catalyze international partnerships in the process of addressing collective challenges. In June 2021, the United States and its G7 partners launched the Build Back Better World (B3W) partnership, committing to concrete actions to help meet infrastructure needs in low- and middle-income countries and expressing a unified vision for global infrastructure development. In the announcement of the initiative, President Biden said the United States would seek to mobilize for this purpose the full potential of its development finance tools, including the Development Finance Corporation, USAID, EXIM, the Millennium Challenge Corporation, the U.S. Trade and Development Agency, and complementary bodies such as the Transaction Advisory Fund (The White House, 2021i).

II. Addressing supply chain bottlenecks

The COVID-19 pandemic and its severe economic impact revealed several vulnerabilities in global supply chains. With borders closed and lockdown measures taken to contain the spread of the virus, global supply chains broke down and the United States was hard-pressed to find essential goods to protect the health of the population and keep the economy running since many products were not produced domestically or not produced in enough quantities to compensate for the fall in foreign supplies. Concerns about the lack of resilience in some key supply chains in the face of devastating shocks such as a global pandemic or severe weather events due to climate change resulted in calls for action.

On 24 February 2021, President Biden signed Executive Order (EO) 14017, “America’s Supply Chains,” in which he directed the United States government to undertake a comprehensive review of critical U.S. supply chains within 100 days of the date of the order, to identify risks, address vulnerabilities and develop a strategy to promote resilience (The White House, 2021d). To this end, the Administration established an internal task force across more than a dozen federal departments and agencies. Administration officials consulted with stakeholders from labor, business, academic institutions, Congress, and foreign allies to identify vulnerabilities and develop solutions. As part of the 100-Day Supply Chain Review, the interagency task force conducted comprehensive studies of the United States supply chains for four critical products: semiconductor manufacturing and advanced packaging; large capacity batteries; critical minerals and materials; and pharmaceuticals and active pharmaceutical ingredients (APIs).

Although the four reports contain several sector-specific recommendations to strengthen the individual product supply chains, there are also some cross-cutting recommendations to not only strengthen the four prioritized supply chains, but also rebuild the U.S. industrial base and innovation engine.

The recommendations are divided into six categories: (1) rebuilding the United States production and innovation capabilities; (2) supporting the development of markets with high road production models, labor standards, and product quality; (3) leveraging the government’s role as a market actor; (4) strengthening international trade rules, including trade enforcement mechanisms; (5) working with

allies and partners to decrease vulnerabilities in the global supply chains; and (6) partnering with industry to take immediate action to address existing shortages.

This section will focus on the recommendations in category (3): leveraging the government's role as a market actor. It will also describe President Biden's "Buy American" Executive Order 14005, which regulates federal government procurement practices and aims to strengthening the United States' manufacturing production and employment.

A. The role of the federal government

The report recommends leveraging the role of the federal government as consumer and investor to strengthen supply chain resilience and support national priorities, according to the following guidelines:

- *Use federal procurement to strengthen the United States supply chain*

Federal procurement has the potential to support production of critical products by creating a stable source of demand for products made in the United States —thereby providing an incentive for the private sector to invest in the manufacturing sector.

The report recommends that, in connection with the Administration's "Made in America" process directed by Executive Order number 14005 (described in Section C), the Biden Administration establish a list of designated critical products that it recommends receive additional preferences under the Buy American Act and the Federal Acquisition Regulatory (FAR) Council regulations to ensure that the federal government procures critical products made in the United States.

- *Strengthen domestic production requirements in federal grants for science and climate R&D*

The report recommends that the Biden Administration update manufacturing requirements in federal grants, cooperative agreements, and R&D contracts to ensure that taxpayer funded R&D leads to products made in the United States.

Additionally, the report recommends that the Department of Energy immediately strengthen domestic manufacturing requirements for grants, cooperative agreements, and R&D contracts, including those related to lithium batteries, using the Determinations of Exceptional Circumstances under the Bayh-Dole Act and other legal means. Moreover, it is recommended that an interagency working group be established to identify best-practices and develop and implement further improvements across the government.

- *Reform and strengthen the United States stockpiles*

Action needs to be taken to recapitalize and restore the National Defense Stockpile of critical minerals and materials. In the private sector industries that have faced shortages of critical goods, evaluate mechanisms to strengthen corporate stockpiles of select critical products to ensure greater resilience in times of disruption.

- *Ensure that new automotive battery production in the United States adheres to high labor standards*

Tax credits, lending and grants offered to businesses to produce batteries domestically should, to the extent permitted by law, ensure the creation of quality jobs with the free and fair choice to organize and bargain collectively for workers. For new appropriations, the report recommends that Congress include prevailing wage requirements, like those included in the American Recovery and Reinvestment Act of 2009. Also, Congress is exhorted to include standards that cover construction, such as: (1) mandated hiring percentages from registered apprenticeships and other labor or labor-management training

programs; (2) project labor, community labor and local hire requirements; and (3) employer neutrality agreements. The report recommends implementing similar standards for production workers.

B. Task Force to tackle near-term bottlenecks

As part of the 100-Day Supply Chain Review, the Biden Administration also announced a new Supply Chain Disruptions Task Force to provide a whole-of-government response to address near-term supply chain challenges to the economic recovery, to be led by the Secretaries of Commerce, Transportation, and Agriculture. It will focus on areas where a mismatch between supply and demand has been evident: homebuilding and construction, semiconductors, transportation, and agriculture and food. The Task Force will bring the full capacity of the federal government to address near-term supply/demand mismatches. It will convene stakeholders to diagnose problems and surface solutions—large and small, public or private—that could help alleviate bottlenecks and supply constraints (The White House, 2021h).

C. Buy American

On 25 January 2021, President Biden signed Executive Order 14005 called “Executive Order on Ensuring the Future is Made in All of America by All American Workers,” regulating federal government procurement practices to increase the federal government purchase of made in the United States products with the goal of strengthening the country’s manufacturing production and employment. This continues the shift in trade policy away from globalization and free trade and toward protecting United States workers and revitalizing struggling domestic industries observed under President Trump’s term. Arguably, these trends have been accelerated by the COVID-19 pandemic.

The federal government spends about US\$ 600 billion annually on contracts. As a presidential candidate, President Biden called for the federal government to spend US\$ 400 billion over four years on materials and services made in the United States, as well as US\$ 300 billion on United States-based research and development involving electric cars, artificial intelligence, and similar technologies. Half of the US\$ 300 billion would go to clean-energy initiatives and were previously announced.

The Executive Order:

- *Tightens domestic content rules.*

Some loopholes in current law allow products to be labeled “made in America” for purposes of federal procurement even if only 51% of the materials used to produce them are domestically made. The Executive Order will tighten these rules to require more legitimate U.S. content and will raise the price preferences for domestic goods—the difference in price over which government can buy a product from a non-U.S. supplier.

- *Appoints a new senior leader in the Executive Office of the President in charge of the government’s Made-in-America policy approach.*

The new Director of Made-in-America at the Office of Management and Budget (OMB) will oversee the implementation of the Executive Order, make sure the President’s new rules are followed, work with key stakeholders, and carry through the President’s vision in conjunction with their executive agency partners.

- *Increases oversight of potential waivers to Buy American requirements.*

To date, procurement officers within federal Agencies could waive Buy American rules without explanation or scrutiny. The Executive Order will close these waiver loopholes. First, by establishing a transparent process so that any time a federal contractor requests a waiver based on a claim that something can’t be made in the United States, it will be published on a website for all potential

bidders and relevant stakeholders (like labor unions) to see. The Executive Order directs the General Services Administration (GSA) to publish relevant waivers on a publicly available website. Second, by using an expanded **Manufacturing Extension Partnerships** together with new efforts to identify firms –particularly small businesses and those owned by women and people of color– that have the capability to fill these procurement needs and provide direct support so that they have a shot at making the product in the United States. The EO directs agencies to utilize the Manufacturing Extension Partnerships to help agencies connect with new domestic suppliers.

- *End false advertising.*

The EO will also crack down on companies that label products as Made in America even if they're coming from elsewhere.

- *Extend Buy American to other forms of government assistance.*

For example, when the government is investing in research and development, it should also be supporting domestic manufacturing and sourcing. If companies benefit from taxpayer-funded research that leads to new products and profits, those products should be made in the United States, or the company should reimburse the government for its support.

- *Direct a cross-agency review of all domestic preferences.*

The order requires agencies to report on their implementation of current Made in America laws and make recommendation for achieving the President's Made in America goals, and to continue to do so on a bi-annual basis. This review includes a requirement that agencies submit recommendations for ways to ensure items offered to the public on federal property are Made in America and to consider services industries in addition to manufacturing.

- *Reiterates the President's strong support for the Jones Act: ship American.*

The United States-flag Merchant Marine fleet and the men and women who operate United States-flag ships are crucial to the country's national security, international trade relationships, and economic development. For this reason, President Biden has been a strong advocate for the Jones Act and its mandate that only United States-flag vessels carry cargo between ports in the United States. He will take steps to ensure U.S. cargo is carried on U.S.-flag ships, leading to additional demand for U.S.-made ships and U.S. merchant mariners.

D. The 2022 strategy to address supply chain disruptions

In February 2022, the results of signed Executive Order (EO) 14017, "America's Supply Chains," were made public (The White House, 2022a), and the Biden-Harris Administration announced a multifaceted plan to shore up resiliency and preparedness by:

- *Implementing the Bipartisan Infrastructure Law (the IIJA) to strengthen the transportation systems needed by critical supply chains.*
- *Pushing a new domestic manufacturing initiative within the Export-Import Bank to support small and medium-sized manufacturing firms.*
- *Expanding programs at the Department of the Treasury and the Small Business Administration to increase access to capital for small manufacturers.*
- *Hosting roundtables and expositions to better support the technological innovation of domestic manufacturers.*

- *Investing in the sustainable production of materials critical to disrupted supply chains*, while still centering the United States' larger climate goals.
- *Investing in the domestic meat and poultry industry* to create a more diverse supply chain while supporting workers by expanding the Department of Labor's Good Jobs Initiative.

These newest proposals were meant to build upon President Biden's Build Back Better agenda and the America Creating Opportunities for Manufacturing, Pre-Eminence in Technology, and Economic Strength (COMPETES) Act, which was passed by the House of Representatives on 4 February 2022, to reorient the United States federal government towards a more involved and proactive role in its domestic manufacturing economy.¹⁴ However, much of the success of the Administration's proposals rests on the capability of supporters within the Legislative Branch to pass supplementing legislation (Arasasingham, Aidan et al, 2022).

A key measure throughout the Biden-Harris Administration's plan is the further institutionalization of supply chain resiliency across the federal government. This was seen in 2021 with the creation of the inter-agency Supply Chain Disruptions Task Force and was followed by measures like the Department of Health and Human Services' newly established Office of Supply Chain Management. Now, the Administration has outlined four plans to continue integrating supply chain operations into its standard portfolio (The White House, 2022a):

- By reforming the Buy American Act to have the federal government pay an additional premium for certain critical domestic-made products, the Administration seeks to support weaker supply chains and increase the accessibility of government contracts for small and mid-size manufacturers.
- By having the Department of Energy release US\$ 44 million in funding for technologies that increase the domestic supply of rare earth elements while providing net-negative emissions, the Administration aims to both bolster the energy supply chain and organize towards a clean energy transition.
- By having the Department of Health and Human Services provide financing towards the expansion of the domestic health resources industrial base, the Administration aims to establish self-sufficiency for U.S. pharmaceutical products.
- By having the U.S. engage with its trading partners on collaborative strategies to secure supply chains, the Administration hopes to create a network of economic security amongst its allies (The White House, 2022b). They specifically outline plans with Mexico to create a list of critical cross-border supply chains and establish procedures to maintain their continuity, even through crises.
 - The Biden-Harris Administration specifically mention its newly established High Level Economic Dialogue with Mexico as a strategy to maintain open communication on collaborative economic policy solutions that would improve "the regional business environment and [strengthen] the resilience of U.S.-Mexico supply chains," while seeking to "facilitate economic recovery and strengthen infrastructure, trade facilitation, and innovation" (The White House (2022b), p.20).

Taken as a whole, the Biden-Harris Administration have pushed government institutionalization to attempt to catalyze the private sector's recovery while shoring up its defenses for future disruptions.

¹⁴ The America COMPETES Act is discussed in more detail in Part II B of this report.

III. Investing in innovation and competitiveness

The exposure of vulnerabilities in the global supply chains, and the multiple calls for diversifying them, has brought an even bigger focus on China's role in the world economy. According to data from the United Nations Conference on Trade and Development (UNCTAD), which tracks global trade, China's share of global goods exports by value increased over the course of the pandemic –to 15% by the end of 2021 from 13% in 2019– while the United States' share fell to 7.9% from 8.6% in the same period (Douglas, 2022). Although some of China's gains in global markets may unwind as the effects of the pandemic fade, the trend nonetheless highlights the world's dependency on China's manufacturing.

Against this background, there has been wide consensus among United States policymakers on the need to design policies and pass legislation with a focus on accelerating innovation and strengthening competitiveness in the United States. In June 2021, the Senate passed the United States Innovation and Competition Act of 2021 (USICA), with the intention to "jumpstart American competitiveness and make one of the most significant government investments in American innovation and manufacturing in generations," according to Senate Majority Leader Chuck Schumer. The USICA had the intent to increase spending in innovation and improve the United States competitiveness, through an expanded role of the federal government. The USICA, described in annex 1 of this document, passed on a bipartisan basis in the Senate, would spend about US\$ 250 billion in total across several key industries to counter China's growing technological and economical ambitions.

After its approval in the Senate, the legislation moved to the House of Representatives. Some House lawmakers showed concerns that the Senate bill would not direct enough funding to scientific research and that it would limit international cooperation regarding scientific endeavors. The House thus passed its own legislation in February 2022, described in annex 2, the America Creating Opportunities for Manufacturing Pre-Eminence in Technology and Economic Strength (COMPETES) Act of 2022.

In its passage in the Senate, USICA was supported by 19 Republicans who joined with Democrats in a vote of 68 to 32. The America COMPETES Act, in contrast, was passed by a Democrat-majority House, largely along party lines. To move forward, congressional leaders from both chambers worked to

compromise on a unified bill that could pass under bipartisan scrutiny, putting together a Conference Committee with 50 House and 14 Senate members to reconcile the differences between the two versions before the bill could become law. In August 2022, the CHIPS and Science Act of 2022 was signed into law.

A. The CHIPS and Science Act of 2022

The United States Congress passed the Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act of 2022 to promote domestic manufacturing of semiconductor chips in July 2022, after working to reconcile the original versions from the Senate (USICA) and the House (America COMPETES Act). The bill passed the Senate on 27 July and the House on 28 July with strong bipartisan support and was signed into law on 9 August 2022. The US\$ 280 billion legislation aims to also invest in workforce training and basic research, as well as support regional manufacturing hubs.

The motivation for the CHIPS and Science Act of 2022 was twofold: increase the United States competitiveness and strengthen national security. One concern is that the United States is no longer competitive in this field as it once was –only 12% of chips are currently manufactured domestically, compared with 37% in the 1990s, and the United States also lacks capabilities to produce the most advanced chips at volume– while many foreign competitors, including China, are investing heavily to dominate the industry. Another concern is national security, given the variety of essential products and services that now rely on semiconductors (Van Hollen, 2022).

The CHIPS and Science Act of 2022 provides appropriations needed to implement the currently authorized programs from the bipartisan CHIPS for America Act, as well as to implement the USA Telecom Act that was enacted in the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021.¹⁵ This program would help shore up the global telecommunications supply chain (Van Hollen, 2022).

Highlights of the CHIPS and Science Act of 2022 include:

Division A – CHIPS and ORAN Investment:

- US\$ 54.2 billion in total appropriations for CHIPS and Public Wireless Supply Chain Innovation (also known as ORAN).
 - (a) The bill establishes the CHIPS for America Funds, which provides US\$ 52.7 billion of funding for development of domestic manufacturing capabilities, R&D, and work development programs. Of this, US\$ 39 billion is appropriated for financial assistance to build, expand, or modernize domestic semiconductor facilities, with US\$ 6 billion of this funding to be used for direct loans or loan guarantees. Another US\$ 11 billion will go toward advanced research and development programs under the United States Department of Commerce, and US\$ 2 billion is slated for the Department of Defense for national defense technology applications and semiconductor workforce training.
 - (b) The Act appropriates US\$ 1.5 billion to support innovation in the United States mobile broadband market.
 - (c) The Act establishes the Advanced Manufacturing Investment Credit (creating a 25% investment tax credit) to incentivize the manufacturing of semiconductors, as well as for the manufacturing of the specialized tooling equipment required in the semiconductor manufacturing process.

¹⁵ Appropriations determine how much funding government agencies and programs will get, while authorizations recommend funding levels for the agencies and programs they authorize, but their recommendations are non-binding.

- (d) CHIPS for America Fund recipients are barred from using the money to buy stock of the company or parent company or to pay dividends. Additionally, to ensure that the manufacturing incentives advance U.S. technology leadership and supply chain security, the Act would require recipients of federal financial assistance to join an agreement prohibiting certain material expansions of semiconductor manufacturing in the People's Republic of China or in other countries of concern.¹⁶

Division B – Research and Innovation

The United States Federal R&D spending as a percentage of GDP is near its lowest point in over 60 years, and at the global level has fallen from fourth place in the 1990s to ninth place today, behind advanced economies like South Korea, Japan and Germany. To reverse these trends, the CHIPS and Science Act of 2022 would authorize, in dollar terms, the largest five-year investment in public R&D in the country's history (Van Hollen, 2022).

- The bill authorizes US\$ 169.9 billion to the National Science Foundation (NSF), Department of Commerce (DOC), National Institute of Standards and Technology (NIST), Department of Energy and National Aeronautics and Space Administration (NASA) over the next five years for scientific research and development. US\$ 81 billion is authorized for the NSF over the next five years to research new ideas, build the STEM workforce, and expand rural STEM education. An additional US\$ 10 billion is authorized for the DOC to create 20 regional technology and innovation hubs to focus on technology development, job creation, and expanding innovation capacity (table 7).

Table 7
CHIPS and Science Act of 2022: key authorized programs
(Billions of dollars)

Key Programs	Five-year authorization	Increase over baseline
National Science Foundation (NSF)	81	36
NSF Tech Directorate	20	20
NSF Core Activities	61	16
Department of Commerce (DOC)	11	11
Regional Technological Hubs	10	10
RECOMPETE Pilot	1	1
National Institute of Standards and Technology (NIST)	10	5
NIST Research	6.9	2.8
Manufacturing USA	0.829	0.744
Manufacturing Extension Partnership	2.3	1.5
Department of Energy (DOE)^a	67.9	30.5
DOE Office of Science	50.3	12.9
Additional DOE Science and Innovation	17.6	17.6
Total	169.9	82.5

Source: Van Hollen (2022), CHIPS and Science Act of 2022 Summary.

^aAcross all the DOE sections, there is:

1. A total of US\$ 14.7 billion for infrastructure, equipment, and instrumentation across 17 DOE National Laboratories.
2. A total of US\$ 16.5 billion in new or above baseline authorizations for research in the 10 technology areas identified in USICA across the Office of Science and DOE's applied R&D offices in advanced energy and industrial efficiency technologies, artificial intelligence and machine learning, advanced manufacturing, cybersecurity, biotechnology, high performance computing, advanced materials, and quantum information science.

¹⁶ With concerns growing about China's economic and technological ambitions, the bill includes strict new guardrails for firms considering expanding into China. Chip manufacturers that want to take U.S. funding cannot make new, high-tech investments in China or other "countries of concern" for at least a decade — unless they are producing lower-tech "legacy chips" destined only to serve the local market. The Department of Commerce will choose which companies qualify for the money and it has said it will give preference to companies that invest in research, new facilities and work force training, rather than those that engage in the kind of share buybacks that have been prevalent in recent years (Swanson, 2022).

- Aside from dramatically increasing research funding, the Act would build new technology hubs across the country, increasing the participation of underrepresented populations and geographies in innovation, and combat the illicit foreign absorption or theft of U.S. research products, in an effort to regaining U.S. strength and reducing long-term supply chain vulnerabilities in critical areas such as advanced manufacturing, next-generation communications, computer hardware, and pharmaceuticals.
- The Act establishes a Moon to Mars Program, which would include Artemis missions, to achieve human exploration of Mars, and extends the authorization for the International Space Station through 2030.

The Congressional Budget Office (CBO) estimated the legislation would increase budget deficits by US\$ 48 billion over five years and By US\$ 79 billion through 2031 (table 8). However, the modest fiscal stimulus included in the CHIPS and Science Act should be more than offset by the net fiscal tightening in the proposed inflation reduction reconciliation bill discussed in Part I of this document, on section E.

Table 8
CHIPS and Science Act of 2022: CBO cost estimate
(Billions of dollars)

Provision	2022-2026 Cost	2022-2031 Cost
Create CHIPS for America Fund	24.5	50.5
Funding for wireless supply chain innovation	0.7	1.4
Funding for research and innovation	0.2	3.1
Advanced Manufacturing Investment Tax Credit	22.1	24.3
Total	47.5	79.3

Source: Congressional Budget Office, Committee for a Responsible Federal Budget (2022a).

Although touted as an effort to revitalize the United States semiconductor industry, the CHIPS and Science Act of 2022 would also make sizable investments in fighting climate change: over the next five years, it would direct an estimated US\$ 67 billion, or roughly a quarter of its total funding, toward accelerating the growth of zero-carbon industries and conducting climate-relevant research, according to an analysis from RMI, a nonpartisan energy think tank based in Colorado. That would make the legislation one of the largest climate bills ever passed by the United States Congress, exceeding the total amount of money spent on renewable-energy tax credits from 2005 to 2019, according to estimates by the CBO. And it is more than half the size of the climate spending in President Obama's 2009 stimulus bill (Meyer, 2022).¹⁷

Supply chain resilience has become a central aim of the United States' economic policy post-COVID-19 pandemic. The CHIPS and Science Act is determined to invest in semiconductor manufacturing to increase such resilience. However, it may be hard to achieve. Behind chip production sits a network supplying equipment and other items encompassing hundreds of raw materials, chemicals, consumable parts, gases and metals without which the extremely precise process of chipmaking could not function. While a globalized semiconductor industry used to run smoothly across dozens of countries, the effort to replicate this architecture inside single countries or regions has revealed and exacerbated bottlenecks in the supply chain, according to Nikkei Asia's investigations and interviews with more than two dozen senior industry executives from major chip economies of the

¹⁷ The bill only authorized much of its new clean-energy spending, it did not appropriate it, a legal distinction that means agencies must go back to Congress in the future to secure the rights to put the funds toward specific purposes (Meyer, 2022).

United States, European Union, Taiwan and Japan over the past five months. Looking forward, with geopolitical conflicts and trade barriers threatening to prevail over globalization, upon which the chip industry was built, the risk of sub-optimization, higher costs and slower innovation for consumer and companies may increase over time (Ting-Fang and Li, 2022).

B. Executive Order on “Promoting Competition in the American Economy”

On 9 July 2021, President Biden signed EO 14036 on “Promoting Competition in the American Economy”, which directs federal agencies to more vigorously enforce antitrust laws and coordinate their response to corporate consolidation. The order outlines 72 initiatives that regulatory agencies can implement to tackle what the Administration identifies as anti-competitive practices in labor markets and in six sectors: healthcare, transportation, internet services, technology, agriculture, and banking and consumer finance. Behind the executive order is a body of academic research that finds the United States economy has become less competitive in the past two decades (box 2).

Box 2

Academic research on the state of competition in the United States economy

There is a body of research suggesting that competition in the United States economy is in decline. The decline in competition has had big implications for the broader economy according to this recent research, including fewer thriving startup companies, a lack of dynamism in the labor market, stagnant worker wages and lower productivity.

For example, De Loecker, Eeckhout and Unger (2020) found that over the past four decades, the average markup has risen to more than 54% from an average of 21% in 1980. The markup is a firm’s ability to charge prices above its own costs for producing the product, and it is one sign of a firm’s power in a marketplace. The research shows that while overall consumer price inflation was largely subdued during the period, the cost of producing consumer goods and services was even more subdued, leading to big gains in profits for firms and diminishing gains to workers and consumers.

With the rise of a few big companies, jobs also have become concentrated there. John Haltiwanger, a University of Maryland professor, finds that the share of jobs at young (10 years or younger) and small (fewer than 500 employees) firms declined to 16% in 2018 from 26% in 1987. During the same period, the share of jobs in mature (more than 10 years), larger (more than 500 employees) firms rose from 41% to more than half. His research shows that the United States economy became less dynamic during this period, with fewer new jobs created by startup firms, workers that were less likely to switch jobs and slower productivity growth.

However, there is also skepticism of the notion that corporate power has hurt consumers. Douglas Holtz-Eakin, president of the American Action Forum, has said that the rise of big companies such as Walmart Inc, Home Depot Inc, and Amazon has benefited consumers by helping to push down prices. Nancy Rose (2019), concluded in an examination of research on the issue, that “there are reasons to be cautious about concluding that market concentration has risen or is a meaningful problem for market competition and consumer welfare”. Rose adds that it is also unclear what higher markups imply about the state of competition, as a rise in markups could be the result of more efficient firms lowering their marginal costs. Higher markups could also reflect increased economic rents.

Source: Hilsenrath (2021), De Loecker, Eeckhout and Unger (2020), John Haltiwanger, University of Maryland, Rose (2019).

By many measures the United States economy has become less dynamic in the 21st century than it was in the late 20th century. Fewer new businesses are starting, existing businesses have slowed the pace in which they hire new workers, workers are less likely to switch jobs or move to a new city, companies are investing in new buildings and equipment at a lower rate, and small businesses make a shrinking share of the economy (Leonhardt, 2021). E.O 14036 encourages federal agencies to push against corporate consolidation and businesses practices that might stifle competition across a range of industries, from Big Tech to airline baggage fees.

A wide range of industries shows large concentrations of dominant firms. For example, three big companies —Anheuser-Busch InBev, Constellation Brands and Molson Coors Beverage Co.— control more than 70% of all U.S. sales, according to the National Beer Wholesalers Association. According to

the Open Markets Institute, in candy, two firms control 60% of U.S. sales; in mobile-phone services, four firms control 98% of market share; in airlines, four firms control 76% of the market; in hearing aids, four firms control 84% of the market; in eyeglasses, three firms have a 61% share.

The order establishes a “White House Competition Council, led by the Director of the National Economic Council, to monitor progress on finalizing the initiatives in the Order and to coordinate the federal government’s response to the rising power of large corporations in the economy” (The White House, 2021k). The order establishes a “whole-of-government” effort, calling on the vast resources of numerous agencies, and not just the two that traditionally oversee antitrust issues (the Department of Justice and the Federal Trade Commission). The push on competition also includes a provision to “encourage” the Federal Trade Commission to “ban or limit” non-compete clauses to make “it easier to change jobs and help raise wages.” The order also encourages limitations on occupational licensing requirements and other measures that Administration officials say hurt workers’ ability to pursue better jobs.

Conclusion

As the economic effects of the COVID-19 pandemic began to recede, the United States economic policy agenda became more forward-looking, aiming to make the economy not only more dynamic but also more inclusive and environmentally sustainable over the long-term. The proposed plans described in this document intend to address a range of challenges that have long afflicted the United States economy. They were magnified by the COVID-19 pandemic, which has worsened income inequality and has had a disproportionate impact on minorities and communities that have been historically underserved and marginalized.

The economic policy agenda proposed by the United States Administration in 2021 had a “whole-of-government” approach, looking to involve multiple public agencies and offering incentives to catalyze private sector participation and international partnerships in the process of providing a common approach to collective problems. The US\$ 550 billion Infrastructure and Jobs Act (IIJA) signed into law in November 2021, the US\$ 280 billion CHIPS and Science Act of 2022 and the US\$ 440 billion Inflation Reduction Act (IRA), both signed into law in August 2022, suggest an expanded role for the federal government to address structural and societal challenges, and an emphasis on offering incentives so that goals may be achieved.

For decades, policymakers in the United States viewed government intervention in the economy as a waste of resources and a burden to taxpayers, politicizing decisions best left to markets. However, supply chain disruptions during the COVID-19 pandemic and the war in Ukraine have raised policymakers concerns about the overreliance on suppliers in regions and countries where geopolitical risk is rising. Allowing the production of semiconductors and other sensitive products to migrate to countries that could use it as leverage against the United States has become a concern for its policymakers. Treasury Secretary Janet Yellen in a speech in July said that trade policy should take into account “externalities arising from concentration of supply chains, geopolitical concerns, and value –rather than overly focusing on cost” (United States Department of the Treasury, 2022). The signing into law of the IIJA and the CHIPS and Science Act of 2022, which were approved with bipartisan support, indicates that there is now bipartisan backing for government support to strengthen the competitiveness of U.S. industries.

The passage of three major legislations in the past year also suggests a significant shift in climate spending. According to Lachlan Carey, author of a new analysis from RMI, an energy think-tank, when viewed together these laws are set to more than triple the federal government's average annual spending on climate and clean energy from the previous decade. The analysis indicates that the federal government will spend roughly US\$ 80 billion a year on accelerating the development and deployment of zero-carbon energy and preparing for the impacts of climate change. That would exceed the GDP of about 120 of the 192 countries that have signed the Paris Agreement on Climate Change, according to Mr. Carey. By the end of the decade, the federal government could eventually spend more than US\$ 521 billion (Meyer, 2022).

According to a cross-sector analysis by Moody's, the IRA and the CHIPS and Science Act together will likely amplify each other's impact on productivity, innovation and growth, and support the transition to a low-carbon economy (Moody's, 2022). The IRA, in particular, includes some of the most significant climate change legislation enacted in the United States to date, with US\$ 369 billion dedicated to climate and clean energy programs.

The IRA is the United States' largest investment to date to slow global warming. Modelling by Rhodium Group, Energy Innovation, and Princeton University, suggests it could put the United States on track to reduce greenhouse gas emissions by around 40% below 2005 levels by 2030. It would help move the country closer to its stated goal of cutting emissions in half within the decade and take a lead on fighting global warming. Analysts expect the federal government to take further steps through executive action to reduce emissions, and states to increase their own clean-energy ambitions.

Looking ahead, the amount to be spent on energy and climate over the next decade will likely crowd in private investments. It may also boost the United States' ability to kindle a sense of global urgency ahead of the 27th session of the Conference of the Parties (COP 27) to the United Nations Framework Convention on Climate Change (UNFCCC) to take place in Sharm El-Sheikh, Egypt, in November 2022.

Bibliography

- Access Partnership (2021), "Infographic and Interactive Dashboard: U.S. Innovation and Competition Act of 2021 (USICA)" [online] <https://www.accesspartnership.com/dashboard-and-infographic-u-s-innovation-and-competition-act-of-2021-usica/>.
- America COMPETES Act of 2022, H.R. 4521, file:///C:/Users/hvelloso/Downloads/BILLS-117hr4521eh.pdf.
- Arasasingham, Aidan et al. (2022) "Takeaways from President Biden's Supply Chain Plan for 2022." *Center for Strategic and International Studies*, 28 February 2022 [online] <https://www.csis.org/analysis/takeaways-president-bidens-supply-chain-plan-2022>.
- Buchholz, Katharina (2021) "Chip Production Shifts Away From Traditional Strongholds" *Statista*, 17 August 2021 [online] <https://www.statista.com/chart/25552/semiconductor-manufacturing-by-location/>.
- Committee for a Responsible Federal Budget (2021a), "COVID- Relief Lifted Personal Income to Record Levels", 6 May 2021 [online] <https://www.crfb.org/blogs/covid-relief-lifted-personal-income-record-levels>.
- _____ (2021b), "Breaking Down US\$ 3.4 Trillion in COVID Relief" 7 January 2021 [online] <https://www.crfb.org/blogs/breaking-down-3-4-trillion-covid-relief>.
- _____ (2021c), "What's in President Biden's American Jobs Plan?" 2 April 2021 [online] <https://www.crfb.org/blogs/whats-president-bidens-american-jobs-plan>.
- _____ (2021d), "What's in President Biden's American Families Plan?" 28 April 2021 [online] <https://www.crfb.org/blogs/whats-president-bidens-american-families-plan>.
- _____ (2022a), "CBO Estimates "Chip-Plus" Bill Would Cost \$79 billion" 22 July 2022 [online] <https://www.crfb.org/blogs/cbo-estimates-chips-plus-bill-would-cost-79-billion>.
- _____ (2022b), "What's in the Inflation Reduction Act?" 28 July 2022 [online] <https://www.crfb.org/blogs/whats-inflation-reduction-act>.
- Congressional Bills 117th Congress (2021), "S.1260 - United States Innovation and Competition Act of 2021" 8 June 2021 [online] <https://www.congress.gov/bill/117th-congress/senate-bill/1260/text>.
- _____ (2022), "H.R. 4521: America COMPETES Act of 2022" 4 February 2022 [online] <https://www.congress.gov/bill/117th-congress/house-bill/4521/text>.
- Douglas, Jason (2022), "pandemic Bolsters China's Position as the World's Manufacturer" *The Wall Street Journal*, 21 August 2022 [online] <https://www.wsj.com/articles/pandemic-bolsters-chinas-position-as-the-worlds-manufacturer-11661090580>.
- Duncan, Ian (2022), "Buttigieg opens applications for money to build large infrastructure projects" *The Washington Post*, 23 May 2022 [online] <https://www.washingtonpost.com/transportation/2022/03/23/infrastructure-grants-mega-projects-buttigieg/>.

- Economic Policy Institute (2020), "State of Working America Wages 2019" Report by Elise Gould, 20 February 2020 [online] <https://www.epi.org/publication/swa-wages-2019/>.
- Federal Reserve, Board of Governors of the Federal Reserve System (2021), "Industrial Production and Capacity Utilization: The 2021 Annual Revision" *Federal Reserve Statistical Release*, 28 May 2021 [online] <https://www.federalreserve.gov/releases/g17/revisions/current/g17rev.pdf>.
- Guo, Justin, Peter Foley and Jeremy Schwartz (2021), "Global Economics Dispatch: US manufacturing's decline has been steeper than previously known" Credit Suisse Economics, 11 June 2021.
- Herzinger, Blake (2020), "China Is Fishing for Trouble at Sea" *Foreign Policy*, 20 November 2020 [online] <https://foreignpolicy.com/2020/11/20/china-illegal-catch-fishing-biden-trump/>.
- Hilsenrath, John (2021), "Biden Stakes Out Position in Debate Over Power of Big Companies" *The Wall Street Journal*, 11 July 2021 [online] https://www.wsj.com/articles/biden-stakes-out-position-in-debate-over-big-companies-power-11626020068?mod=searchresults_pos1&page=1.
- Hodge, Andrew and Li Lin (2021) "Boosting the Economy: The impact of US Government Spending Plans" *IMF Country Focus*, IMF Western Hemisphere Department, 1 July 2021 [online] <https://www.imf.org/en/News/Articles/2021/07/01/na070121-boosting-the-economy-the-impact-of-us-government-spending-plans>.
- House Committee on the Budget (2021), "Budget Reconciliation: The Basics," 11 August 2021 [online] <https://budget.house.gov/sites/democrats.budget.house.gov/files/documents/Budget%20Reconciliation%20The%20Basics%20-%20Final%202021.pdf>.
- House Foreign Affairs Committee (2021), "Chair Meeks Issues Statement on EAGLE Act Passage" 15 July 2021 [online] <https://foreignaffairs.house.gov/2021/7/chair-meeks-issues-statement-on-eagle-act-passage#:~:text=3524%2C%20the%20Ensuring%20American%20Global,based%20system%20and%20global%20economy.>
- Inflation Reduction Act: Summary (2022), [democrats.senate.gov](https://www.democrats.senate.gov) [online] https://www.democrats.senate.gov/imo/media/doc/inflatio_reduction_act_one_page_summary.pdf.
- De Loecker, Jan, Jan Eeckhout and Gabriel Unger (2020), "The Rise of Market Power and the Macroeconomic Implications," *The Quarterly Journal of Economics*, vol 135(2), pages 561-644.
- JD Supra (2021) "USICA Passage Suggests Significant Funding Opportunities Across Range of Industries" 18 June 2021, written by Dorsey & Whitney LLP [online] <https://www.jdsupra.com/legalnews/usica-passage-suggests-significant-8950106/>.
- Jones, Benji (2022), "Hidden inside the Inflation Reduction Act: \$20 billion to help fix our farms" *Vox*, 16 August 2022 [online] <https://www.vox.com/science-and-health/2022/8/15/23301352/inflation-reduction-act-farms-climate-wildlife>.
- Kaiser Family Foundation (2021), "KFF Health Tracking Poll: Economic Hardship, Health Coverage, And The ACA", 3 March 2021 [online] <https://www.kff.org/coronavirus-covid-19/poll-finding/kff-health-tracking-poll-late-february-2021/>.
- Kaufman, Ryan K. (2021), "U.S. Senate Passes the United States Innovation and Competition Act Which Would Allocate Billions Toward Higher Education Institutions" *Fraser Trebilcock Blog*, 21 June 2021 [online] <https://www.fraserlawfirm.com/blog/2021/06/u-s-senate-passes-the-united-states-innovation-and-competition-act-which-would-allocate-billions-toward-higher-education-institutions/>.
- Lee, Tom, and Juan Londoño (2021) "The United States Innovation and Competition Act (USICA): A Primer" *American Action Forum*, 9 June 2021 [online] <https://www.americanactionforum.org/insight/the-united-states-innovation-and-competition-act-usica-a-primer/>.
- Levits, Jason and Daniel Meuse (2021) "The American Rescue Plan's Premium Tax Credit Expansion—State policy considerations", *USC-Brookings Schaeffer on Health Policy*, Brookings, 19 April 2021 [online] <https://www.brookings.edu/blog/usc-brookings-schaeffer-on-health-policy/2021/04/19/what-does-the-american-rescue-plans-premium-tax-credit-expansion-and-the-uncertainty-around-it-mean-for-state-health-policy/>.
- Meyer, Robinson (2022) "Congress Just Passed a Big Climate Bill. No, Not That One." *The Atlantic*, 10 August 2022 [online] <https://www.theatlantic.com/science/archive/2022/08/chips-act-climate-bill-biden/671095/>.
- Miller, Chris (2021), "The expanded Child Tax Credit: The CTC's history, impact, and uncertain future", *Up Front*, Brookings, 18 June 2021 [online] <https://www.brookings.edu/blog/up-front/2021/06/18/the-expanded-child-tax-credit-the-ctcs-history-impact-and-uncertain-future/>.

- Moody's (2022), "Inflation Reduction Act will build economic resilience, but its costs and benefits vary by sector" *Sector Comment, Government Policy-US, Cross-sector*, 10 August 2022 [online] https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1338203&cid=Y08N0JE2XZC2681&token=GT9WfUgSILB3XsoN%205z/17xBaEk/e8TD.
- Moss, Sebastian (2021) "Senate Passes \$250 Billion US Innovation and Competition Act, Promises \$52bn in Chip Funding" *Data Centre Dynamics Ltd (DCD) & DC Professional Development Limited (DCPRO)*, 9 June 2021 [online] <https://www.datacenterdynamics.com/en/news/senate-passes-250bn-us-innovation-and-competition-act-promises-in-52-billion-in-chip-funding/>.
- National Institute of Standards and Technology (2022) "Manufacturing Extension Partnership." Information accessed on 30 April 2022 [online] <https://www.nist.gov/mep>.
- NBC News April Poll (4-25-21 Release) [online] <https://www.documentcloud.org/documents/20690434-210098-nbc-news-april-poll-4-25-21-release>.
- Penn Wharton Budget Model (2022), "Senate-Passed Inflation Reduction Act: Estimates of Budgetary and Macroeconomic Effects" 12 August 2022 [online] <https://budgetmodel.wharton.upenn.edu/issues/2022/8/12/senate-passed-inflation-reduction-act>.
- Pistor, Katharina (2021), "Joe Biden's Pro-Market Agenda" Project Syndicated, 20 July 2021 [online] <https://www.project-syndicate.org/commentary/biden-promoting-competition-in-the-american-economy-by-katharina-pistor-2021-07>.
- Politico/Morning Consult (2021), "GOP Lawmakers Say \$1.9 Trillion Stimulus Bill Offers Too Much Support. Most Voters Don't Agree" by Matt Bracken and Claire Williams, *Morning Consult*, 10 March 2021 [online] <https://morningconsult.com/2021/03/10/stimulus-package-support-poll/>.
- Probasco, Jim (2021) "What's in Joe Biden's \$2.3 Trillion American Jobs Plan?" *Investopedia*, 1 April 2021, [online] <https://www.investopedia.com/what-s-in-joe-biden-s-usd2-trillion-american-jobs-plan-5120273>
- Rose, Nancy L. (2019) "Concerns About Concentration" 21 November 2021 [online] <https://live-aspen-economic-strategy-group.pantheonsite.io/wp-content/uploads/2019/12/Maintaining-the-Strength-of-American-Capialism-Concerns-About-Concentration.pdf>.
- Swanson, Anna (2022), Congress Is Giving Billions to the Chip Industry. Strings Are Attached", *The New York Times*, 3 August 2022 [online] <https://www.nytimes.com/2022/08/03/business/economy/chip-industry-congress.html?searchResultPosition=1>.
- Sidley Austin LLP (2021) "The U.S. Innovation and Competition Act: Senate Passes Sweeping \$250 Billion Bill to Bolster Scientific Innovation and Compete With China." *Insights | Sidley Austin LLP*, 16 June 2021 [online] <https://www.sidley.com/en/insights/newsupdates/2021/06/an-overview-of-the-united-states-innovation-and-competition-act>.
- Tett, Gillian (2021), "The 'Cornwall consensus' is here," *Financial Times*, 10 June 2021, [online] <https://www.ft.com/content/aa45eccb-5e0e-477a-8278-db7df959e594>.
- The United States Senate Republican Policy Committee (2021), "S.1260 – The United States Innovation and Competition Act," 19 May 2021 [online] https://www.rpc.senate.gov/legislative-notices/s1260_the-united-states-innovation-and-competition-act.
- The Wall Street Journal (2021), "What's in Democrats' \$3.5 trillion Budget Plan—and How They Plan to Pay for It", a *Wall Street Journal Roundup*, 14 July 2021 [online] https://www.wsj.com/articles/democrats-budget-plan-what-11626301275?mod=searchresults_pos3&page=1.
- The White House (2021a), "The National Strategy for the COVID-19 Response and Pandemic Preparedness", January [online] <https://www.whitehouse.gov/wp-content/uploads/2021/01/National-Strategy-for-the-COVID-19-Response-and-Pandemic-Preparedness.pdf>.
- _____ (2021b), "Build Back Better" [online] <https://www.whitehouse.gov/build-back-better/>.
- _____ (2021c), "President Biden to Sign Executive Order Strengthening Buy American Provisions, Ensuring Future of America Is Made in America by All of America's Workers" 25 January 2021 [online] <https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/25/president-biden-to-sign-executive-order-strengthening-buy-american-provisions-ensuring-future-of-america-is-made-in-america-by-all-of-americas-workers/>.
- _____ (2021d), "Executive Order on America's Supply Chains" 24 February 2021 [online] <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/02/24/executive-order-on-americas-supply-chains/>.

- _____ (2021e), "FACT SHEET: The American Jobs Plan" 31 March 2021 [online] <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/31/fact-sheet-the-american-jobs-plan/>.
- _____ (2021f), "Remarks by President Biden on the American Jobs Plan" 31 March 2021 [online] <https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/03/31/remarks-by-president-biden-on-the-american-jobs-plan/>.
- _____ (2021g), "FACT SHEET: The American Families Plan" 28 April 2021 [online] <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/28/fact-sheet-the-american-families-plan/>.
- _____ (2021h), "FACT SHEET: Biden-Harris Administration Announces Supply Chain Disruptions Task Force to Address Short-Term Supply Chain Discontinuities" 8 June 2021 [online] <https://www.whitehouse.gov/briefing-room/statements-releases/2021/06/08/fact-sheet-biden-harris-administration-announces-supply-chain-disruptions-task-force-to-address-short-term-supply-chain-discontinuities/>.
- _____ (2021i), "FACT SHEET: President Biden and G7 Leaders Launch Build Back Better World (B3W) Partnership" 12 June 2021 [online] <https://www.whitehouse.gov/briefing-room/statements-releases/2021/06/12/fact-sheet-president-biden-and-g7-leaders-launch-build-back-better-world-b3w-partnership/>.
- _____ (2021j), "FACT SHEET: President Biden Announces Support for the Bipartisan Infrastructure Framework" 24 June 2021 [online] <https://www.whitehouse.gov/briefing-room/statements-releases/2021/06/24/fact-sheet-president-biden-announces-support-for-the-bipartisan-infrastructure-framework/>.
- _____ (2021k), "FACT SHEET: Executive Order on Promoting Competition in the American Economy" 9 July 2021 [online] <https://www.whitehouse.gov/briefing-room/statements-releases/2021/07/09/fact-sheet-executive-order-on-promoting-competition-in-the-american-economy/>.
- _____ (2021l), "Executive Order on Promoting Competition in the American Economy" 9 July 2021 [online] <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/07/09/executive-order-on-promoting-competition-in-the-american-economy/>.
- _____ (2021m), "UPDATED FACT SHEET: Bipartisan Infrastructure Investment and Jobs Act" 2 August 2021 [online] <https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/02/updated-fact-sheet-bipartisan-infrastructure-investment-and-jobs-act/>.
- _____ (2022a), "The Biden-Harris Plan to Revitalize American Manufacturing and Secure Critical Supply Chains in 2022," 24 February 2022 [online] <https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/24/the-biden-harris-plan-to-revitalize-american-manufacturing-and-secure-critical-supply-chains-in-2022/>.
- _____ (2022b), "Executive Order on America's Supply Chains: A Year of Action and Progress" 24 February 2022 [online] <https://www.whitehouse.gov/wp-content/uploads/2022/02/Capstone-Report-Biden.pdf>.
- Time (2021), "The House Just Passed Biden's Build Back Better Bill. Here's What's In It" 19 November 2021 [online] <https://time.com/6121415/build-back-better-spending-bill-summary/>.
- Ting-Fang, Cheng and Lauly Li (2022), "The resilience myth: fatal flaws in the push to secure chip supply chains" *Financial Times*, News in-depth, Nikkei Asia, 4 August 2022 [online] <https://www.ft.com/content/f76534bf-b501-4cbf-9a46-80b9feb670c>.
- United States Department of the Treasury (2022), "Remarks by Secretary of the Treasury Janet L. Yellen at LG Sciencepark" *Secretary Statements & Remarks*, 19 July 2022 [online] <https://home.treasury.gov/news/press-releases/jyo880>.
- United States Innovation and Competition Act of 2021 (USICA), S.1260, [online] <https://www.congress.gov/bill/117th-congress/senate-bill/1260/text>.
- Van Hollen, Chris (2022), U.S. Senator for Maryland, CHIPS and Science Act of 2022, Summary, 27 July 2022 [online] <https://www.vanhollen.senate.gov/imo/media/doc/CHIPS%20and%20Science%20Act%20of%202022%20Summary.pdf>.
- Welch, Craig (2022), "How the historic climate bill will dramatically reduce U.S. emissions" *National Geographic*, 12 August 2022 [online], <https://www.nationalgeographic.com/environment/article/how-the-historic-climate-bill-will-dramatically-reduce-us-emissions>.
- Wessel, David (2021a), "What is the Child Tax Credit? And how much of it is refundable?" *Up Front, Brookings*, 22 January 2021 [online] <https://www.brookings.edu/blog/up-front/2021/01/22/what-is-the-child-tax-credit-and-how-much-of-it-is-refundable/>.

- _____ (2021b), "What is reconciliation in Congress?" Up Front, *Brookings*, 5 February 2021 [online] <https://www.brookings.edu/blog/up-front/2021/02/05/what-is-reconciliation-in-congress/>.
- Williams, Aime (2022), "US Senate passes Joe Biden's flagship economic package" *Financial Times*, 7 August 2022 [online] <https://www.ft.com/content/4d1e86e0-0254-4144-b784-88d963b310d5>.
- Yaros, Bernard (2021a), "What Is Budget Reconciliation?" Moody's Analytics, 21 January 2021 [online] <https://www.economy.com/economicview/analysis/382807>.
- _____ (2021b), "Biden Fiscal Policy Flexes Its Muscles" Moody's Analytics, 10 March 2021 [online] <https://www.economy.com/economicview/analysis/383479>.
- Zandi, Mark, Bernard Yaros and Chris Lafakis (2022), "Assessing the Macroeconomic Consequences of the Inflation Reduction Act of 2022", *Moody's Analytics*, 01 August 2022 [online] <https://www.moodyanalytics.com/-/media/article/2022/assessing-the-macroeconomic-consequences-of-the-inflation-reduction-act-of-2022.pdf>.
- Zhou, Li (2022), "Would the Inflation Reduction Act actually reduce inflation?" *Vox*, 4 August 2022 [online] <https://www.vox.com/policy-and-politics/2022/8/4/23292338/congress-inflation-reduction-act-reduce-biden>.

Annexes

Annex 1

The United States Innovation and Competition Act (USICA) of 2021

The United States Innovation and Competition Act (USICA) was approved on a bipartisan basis and passed on a vote of 68 to 32 in the Senate on 8 June 2021 (Congressional Bills 117th Congress, 2021). The bill was intended to boost U.S. semiconductor production, scientific research, artificial intelligence development, and space exploration in the face of growing economic, technological, and military competition from China. The legislation would spend about US\$ 250 billion in total across several key industries to counter China's growing technological and economical ambitions. It includes seven major divisions or acts.

Division A contains the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Act, which would fund domestic semiconductor manufacturing—including fabrication, assembly, testing, and advanced packaging. This division appropriates US\$ 52.7 billion over five years to fund several programs designed to encourage the development of domestic semiconductor manufacturing capabilities in the United States. The backdrop of a global semiconductor shortage since the COVID-19 pandemic disrupted several supply chains, including that of semiconductors.

Division B contains the Endless Frontier Act, a legislation that focuses on improving competitiveness. The Endless Frontier Act would create and fund several new executive organs and programs to focus on developing, commercializing, and training the United States workforce in emerging technologies. Other areas of focus are research funding, standards setting, and science, technology, engineering, and math (STEM) education; cybersecurity and limitations on grant funding to certain researchers subject to foreign influence; identification of key technologies; supply chain resiliency; country of origin labeling; nuclear cooperation; and space leadership. The legislation would authorize roughly US\$ 120 billion over five years for activities at the National Science Foundation (NSF), Department of Commerce (DOC), the Department of Energy (DOE), and the National Aeronautics and Space Administration (NASA). The Endless Frontier Act advances priorities including to reduce undue geographic concentration of research and R&D funding, encourage broader participation of populations underrepresented in STEM, and increase collaboration across federal agencies and with non-governmental partners on innovation.

Division C includes the Strategic Competition Act, which sets forth measures to counteract China's increasing economic, military, and ideological influence across the world. Key elements include investing in strategic sectors globally such as technology, connectivity, infrastructure and energy development; increasing military support to allies in the Indo-Pacific; strengthening partnerships with allies; targeting China's informational and ideological influence by supporting emerging countries susceptible to China's influence; investing in U.S. security objectives in the Indo-Pacific; and sanctioning individuals found to be responsible for human rights abuses.

Division D incorporates the Homeland Security and Governmental Affairs Committee Provisions. It includes provisions that would seek to protect and enhance domestic manufacturing by providing a Buy American requirement for public infrastructure spending, making waivers under the Buy American Act more publicly transparent, and ensuring the manufacturing of personal protective equipment (PPE) in the United States through long-term federal contracts. It also includes various national security and supply chain measures.

Division E of the bill encompasses the Meeting the China Challenge Act of 2021. The Act is designed to address national security and financial services concerns with respect to China.

Division F, for Other Matters, includes three subsets.

Title I of Division F contains provisions that would require the Department of Health and Human Services (HHS) to address the possibility of intellectual property (IP) theft and theft of sensitive genetic information in coordination with national security agencies; increase funding for primary and secondary STEM and computer science education; and increase or reauthorize funding for existing U.S. international education programs.

Title II of Division F would be known as the Merger Filing Fee Modernization Act of 2021. It would revise premerger notification filing fees in an effort to reduce burdens on small businesses while increasing fees for mergers exceeding US\$ 1 billion to generate additional revenue. The Federal Trade Commission would be responsible for increasing fees on an annual basis consistent with changes in the Consumer Price Index.

Title III of Division F would be Congress's effort to better understand the nationwide decline in new businesses. It would require the DOC, in cooperation with the Bureau of the Census to conduct a comprehensive assessment and analysis of factors causing the decline, to include the financial crisis of 2008-09, changing demographics, aging population, increased barriers to capital, increased levels of student debt, and industry concentration in particular markets, among others. The DOC would be required to submit its report to the appropriate Congressional committees. Title III would also require the enforcement of the Phase I agreement negotiated between the United States and China—the Economic and Trade Agreement Between the Government of the United States of America and the Government of the People's Republic of China.

Division G encompasses the Trade Act of 2021. The Trade Act aims to provide the United States Trade Representative (USTR) with additional tools to address anticompetitive digital trade and censorship practices, strengthen efforts to prohibit the importation of goods made with forced labor, and increase congressional oversight over trade policy, particularly with respect to China. The following are some of the issues addressed by the Act:

Supply Chain Resiliency - the Trade Act, like the Endless Frontier Act, makes supply chain resiliency and security a priority. It calls for the establishment of a Committee on Trade in Essential Supplies in the United States. Chaired by the USTR, the Committee would be responsible for reviewing supply chains for essential supplies and "facilitating a whole-of-government strategy to ensure that the U.S. has reliable access to essential supplies."

Buy American - there are several provisions that modernize, strengthen, and increase scrutiny of Buy American rules in federal government contracting. Different provisions that were initially enacted under President Biden's Executive Order 14005 signed on 25 January 2021 would be codified in law and new rules would be implemented. For instance, it would codify the "Made in America Office" in the Office of Management and Budget.

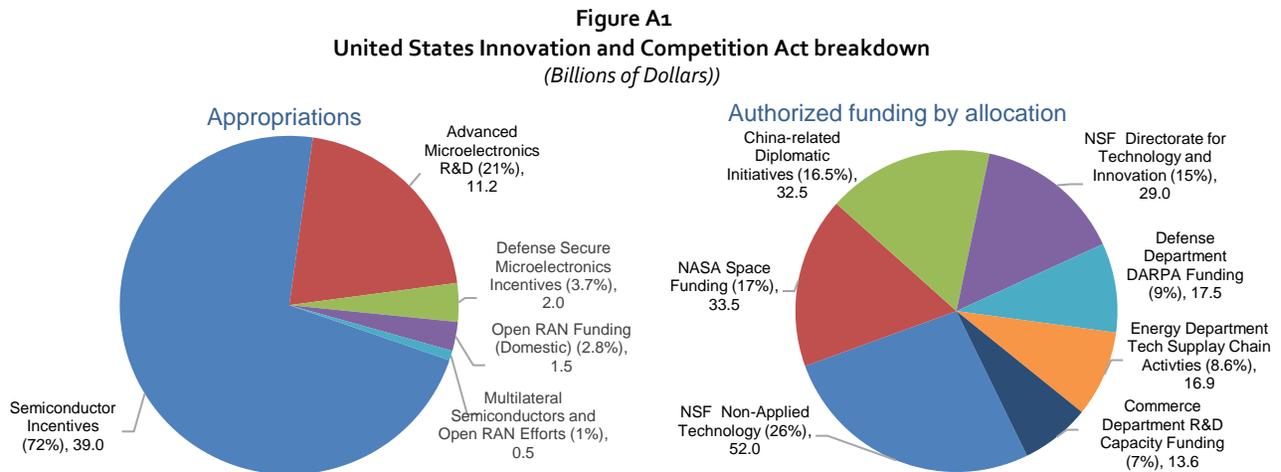
Generalized System of Preferences - the Act reauthorizes the Generalized System of Preferences (GSP), renewing it until 2027. The GSP is a trade preference program that gives duty-free treatment to certain products from developing countries and needs to be periodically renewed by Congress. The Trade Act would include a retroactivity provision allowing importers to get refunds on duties paid since the previous GSP expired on 31 December 2020. The Trade Act also would add new mandatory and discretionary criteria, including relating to human rights, the environment, and digital trade, for consideration in designating a country as a beneficiary under the GSP.

USICA and its seven major divisions extend the role of the federal government in sectors deemed strategic, such as the semiconductor industry and mobile broadband. It does so through various mechanisms including incentive programs, increased research and development funding, and the creation of new government offices.

USICA also expands the federal government's role in education. A significant amount of funding is aimed at institutions of higher education to facilitate research and development in the

“key-technology focus areas,” including robotics, artificial intelligence, advanced energy sources, advanced computing, natural disaster prevention or mitigation, biotechnology and data storage and management (Kaufman, 2021).

The bill authorizes US\$ 81 billion for the National Science Foundation (NSF), including US\$ 29 billion over five years for a new directorate –the Directorate of Technology and Innovation– which would support research and technology development in key technology focus areas and oversee the allocation of funds available for higher education institutions (figure A1).



Source: Access Partnership (2021). Notes: Open RAN-open radio access network. Open RAN initiatives help communications service providers build and operate efficient environments at the mobile edge while preparing for the move to 5G. Appropriations vs Authorizations: Authorizations bills can recommend funding levels for the agencies and programs they authorize, but their recommendations are non-binding. It is the appropriations bills that determine how much funding those agencies and programs will get.

Annex 2

America COMPETES Act of 2022

The House of Representatives passed its own legislation with a focus on accelerating innovation and strengthening competitiveness in the United States. The America Creating Opportunities for Manufacturing Pre-Eminence in Technology and Economic Strength (COMPETES) Act of 2022 was passed along party lines by a vote of 222-210 on 4 February 2022, seeking to address supply chain disruptions and mass shortages in critical goods like semiconductors to better poise the United States for global economic competitiveness.

The bill aims to, among other priorities, fund domestic semiconductor chip manufacturing, invest in domestic scientific research and development, jump-start foreign trade programs, and better poise U.S. foreign policy against Chinese competition. The America COMPETES Act of 2022 contains 12 major divisions (Congressional Bills 117th Congress, 2022):

Division A contains the Creating Helpful Incentives to Produce Semiconductors for America Fund, which appropriates US\$ 52 billion towards domestic semiconductor manufacturing and addressing supply chain disruptions. This comes as, over the past 30 years, the United States’ role in semiconductor manufacturing has been sidelined by foreign countries, such as Taiwan, South Korea, and China (Buchholz, 2021). This division would expand semiconductor research and development, incentivize investment in semiconductor facilities, and provide US\$ 2 billion to support the production of automobiles, consumer electronics, and defense systems.

Division B contains multiple acts aimed at expanding scientific research and development efforts, including the National Science Foundation for the Future Act, the Department of Energy Office of Science for the Future Act, and the National Institute of Standards and Technology for the Future Act. Altogether, these acts fund research in areas such as supply chain security, artificial intelligence, clean energy, biometric identification systems, economic inequality, and cybersecurity. In addition, this division contains provisions to expand and diversify the domestic STEM workforce by establishing youth programs ranging from the pre-K to the graduate level, creating incentives for federal agencies and universities to lower barriers to entry for minorities, investing in rural STEM education programs, and combatting sexual harassment in federal science agencies.

Division C aims to bolster the U.S. economy and national security by supporting domestic manufacturing, strengthening supply chain security, and preventing shortages of critical goods. It allocates US\$ 45 billion towards grants, loans, and loan guarantees that support supply chain resilience, industrial equipment, and manufacturing technology. Specific supply chains emphasized by this division included energy manufacturing chains, medical product chains, and wireless network chains. Further, this division established a new Office within the Department of Commerce to lead supply chain monitoring and strengthening efforts.

Division D aims to orient foreign policy towards global competitiveness (it authorizes US\$ 90 million, over six years, to assist United States companies with China-related supply chain disruptions) by investing in self-sufficiency, allies and partnerships, economic statecraft, climate change resiliency initiatives, and various regional initiatives, including:

- *In the Western Hemisphere*, strengthening the United States –Caribbean partnership by investing in their energy industries and natural-disaster resilience, while broadly instructing the Department of State to formulate a strategy to counter China’s cultural diplomacy and economic investment in Latin America. It aimed to accomplish this regional strategy through a few key approaches:
 - (a) The bill directs the Secretary of State, with consultation from relevant agencies, to create and submit a multi-year strategy to enhance United States economic competitiveness and promote good governance, human rights, and the rule of law in Latin American and Caribbean countries, particularly focusing on areas of investment, sustainable development, commercial relations, anti-corruption activities, and infrastructure projects. The stated goals of this provision were:
 - (i) To enhance the technical capacity of Latin American and Caribbean countries.
 - (ii) To facilitate a more open and competitive environment for United States businesses in the region.
 - (iii) To establish frameworks to review the implications of further investments in strategic sectors, such as energy, natural resources, and communications.
 - (iv) To establish infrastructure project selection and procurement processes that promote transparency, supplier diversity, competition, and sustainability.
 - (v) To strengthen legal structures which are critical to democratic governance, fair competition, and combatting corruption.
 - (vi) To enhance affordable and equitable access to the internet and other digital infrastructure across the Latin American and Caribbean region.
 - (b) The bill directs the Department of State, in coordination with USAID, to create and submit a multi-year strategy to promote collaboration with Caribbean countries with the goal of strengthening energy security, grid reliability, and investments in clean energy. This provision would establish a U.S. Caribbean Clean Energy Initiative as an alternative to China’s Belt and Road Initiative.

(c) The bill authorizes appropriations towards the Department of State's U.S.-Caribbean Resilience Partnership, intending to enhance resilience to natural disasters, severe weather events, and climate-change-related issues.

(d) The bill seeks to counter China's educational and cultural diplomacy in Latin America by directing the Secretary of State, acting through the Assistant Secretary of State for Educational and Cultural Affairs, to devise a strategy that would evaluate and expand existing people-to-people programs and create new exchanges and people-to-people programs that would advance U.S. foreign policy goals and promote U.S. national security interests and values.

- *In other regions of strategic interest, such as Africa, the Middle East, the Arctic, Oceania, and the Pacific Islands, increasing U.S. competitiveness by investing in public health, critical infrastructure, rule of law, and democratic institutions.*
- *In Asia, acting against human rights abuses by funding aid and protections for affected peoples.*

Division E aims to encourage innovation and recruitment along key cyber frontiers, such as artificial intelligence, while including provisions to protect public privacy. For instance, it would establish a rotational cyber workforce program within federal agencies, improving responses to cyber threats through increased manpower. In addition, the Privacy and Civil Liberties Oversight Board would be charged with overseeing artificial intelligence programs within federal agencies to ensure that civil rights are protected as the government navigates new technologies.

Division F seeks to ensure supply chain resiliency and economic independence by having the Department of Homeland Security be more self-sufficient. It ensures that at least one-third of uniforms are manufactured or supplied by small businesses and bans the use of unmanned aircraft systems that are, at any level, manufactured in a foreign country. Further, this division establishes a mentor-protégé program between large and small government firms, to help small businesses compete for contracts.

Division G seeks to safeguard financial stability and take proactive measures against perceived bad actors while further strengthening the United States' position in the world economy, such as increasing pressure on the World Bank and the Asian Development Bank to refrain from granting further bank loans to China unless it participates in debt relief initiatives, shortening the grace period for foreign companies on the United States stock exchange to comply with auditor inspection requirements down to two years, combating China's wildlife trafficking, and streamlining the United States' procurement of vaccines and other medical supplies.

Division H aims to strengthen the United States' environmental and labor standards. It contains numerous provisions to crack down on illegal or unreported fishing, phase out harmful practices such as large-scale driftnet fishing, and prohibit the sale of harmful goods such as shark fins. Many of these practices are major sources of revenue for China (Herzinger, 2020). The division also amends the Coral Reef Conservation Act to better address climate change-related ecosystem loss and pushed for federal agencies to prioritize purchasing domestic seafood.

Division I seeks to strengthen the Department of Justice and Federal Trade Commission's ability to enforce antitrust law, while also seeking to expand the admission of immigrant entrepreneurs and STEM professionals. Specifically, it authorizes US\$ 252 million to the Department of Justice's Antitrust Division and US\$ 418 million to the Federal Trade Commission. Moreover, it creates various visas for start-up employees and entrepreneurs and prioritizes admission of immigrant entrepreneurs and STEM doctoral graduates.

Division J contains the National Apprenticeship Act of 2022 and the Improving Minority Participation and Careers Telecommunications Act, among others, which all work in tandem to increase

the accessibility of key fields, like computer science, expand equitable STEM pathways, and develop the workforce in key industries, like telecommunications. It would authorize competitive grants, run by the Department of Education, to expose students to STEM coursework and reduce college costs.

Division K makes several changes to the Trade Adjustment Modernization Act of 2021 by updating Trade Adjustment Assistance (TAA) programs to match topical needs created by the pandemic and to ensure that benefits reach the most affected communities. This division also amends the Generalized System of Preferences and Miscellaneous Tariff Bill Act of 2021, updating the criteria that foreign governments must meet to receive trade benefits, including expanding labor criteria and adding environmental, human rights, anti-corruption, rule of law, and equitable economic development criterion.

Division L contains the Rebuilding Economies and Creating Opportunities for More People to Excel Pilot Program, which authorizes US\$ 4 billion in grants to local labor markets, communities, and tribes to help implement economic development plans and support sustainable growth.

Annex 3

America COMPETES Act vs USICA

The America COMPETES Act of 2022 served as the House's version of the pre-existing Senate bill, the United States Innovation and Competition Act (USICA), which passed in July of 2021. Though they both aimed to strengthen the United States' global economic competitiveness and do so through many identical provisions, they also contained key differences.

Technological and scientific leadership

A fundamental goal for both bills was ensuring that the United States takes charge in leading research and development across key and emerging fields, such as semiconductor manufacturing and artificial intelligence. Semiconductors represented a significant area of interest, as its production is foundational to many commonly relied upon computer components. The America COMPETES Act and USICA shared clear priorities in expanding funding for critical technological research. However, they varied greatly in their funding targets, in amounts appropriated, and in their stated end-goals.

The Senate Chamber's vision to advance the United States' technological leadership relies heavily on its plans to expand the National Science Foundation (NSF) by creating a new Directorate for Technology and Innovation within it (USICA, Section 2102). This new directorate would focus on supporting research in ten critical areas, including artificial intelligence, natural disaster prevention, and cybersecurity. To see this research completed USICA expands funding for the NSF, authorizing US\$ 11 billion for it in Fiscal Year 2022, eventually increasing to US\$ 21.3 billion by Fiscal Year 2026 (USICA, Section 2116).

In contrast, the House of Representatives' efforts rely on multiple institutions, mainly: the NSF, the Department of Energy (DOE), and the National Institute of Standards and Technology (NIST). Firstly, rather than create a major new directorate, the America COMPETES Act focuses its efforts on overhauling the NSF's pre-existing institutions while also shifting its priorities, having it re-orient its goals towards increasing economic competitiveness, strengthening national defense, and reinforcing academic partnerships. From there, it directs the NSF to support research in areas such as climate change, clean water technologies, and artificial intelligence, while also expanding fellowships and grants for university researchers (America COMPETES Act of 2022, Sections 10306(b), 10306(g), 10306(r), 10306(v) and 10308).

Lastly, throughout the America COMPETES Act, there are several efforts to expand STEM education and career opportunities, specifically for minority-serving institutions (MSIs) such as historically black colleges and universities (America COMPETES Act of 2022, Section 10305). Examples

of this include increasing NSF's outreach to MSIs and expanding investments in Tribal Universities. This commitment to educational and professional diversity is less prominent in USICA. Instead, the Senate bill focused on broadly expanding the accessibility of a STEM education by including such provisions as having its new NSF Directorate fund undergraduate scholarships in critical study areas (USICA, Section 2106). In terms of safeguarding pathways to a STEM career, both pieces of legislation include provisions aimed at combatting sexual harassment in the science fields (America COMPETES Act of 2022, Section 10543. USICA, Section 2521).

Global competitiveness

Both bills exist in response to the same foreign policy landscape: prominent global competitiveness from China while economic shocks from the pandemic and increasing tensions abroad have heightened the need for international security. To match these challenges, the America COMPETES Act bases many of its foreign policy provisions on the House's Ensuring American Global Leadership and Engagement (EAGLE) Act of 2021, which itself sought to out-compete China through diplomatic alliances (House Foreign Affairs Committee, 2021). USICA, on the other hand, takes an approach that emphasizes military preparedness for our allies.

Both bills place much of their foreign policy focus on provisions towards the Indo-Pacific region and increased support for Taiwan as a method of countering China's expansionism. With regards to security measures, they both appropriate US\$ 45 million over five years for military training in the Indo-Pacific (America COMPETES Act of 2022, Section 30222; USICA, Section 3227). However, USICA stands alone in authorizing over US\$ 650 million over five years for additional provisions on military preparedness, including the creation of an Indo-Pacific Maritime Security Initiative and a Foreign Military Financing Compact Pilot Program (USICA, Section 3226).

One major point of contention between both bills' foreign policy strategies is in the extent to which they invest in sustainability provisions and climate change resiliency. While America COMPETES does so frequently, including authorizing US\$ 8 billion over three years for the Green Climate Fund (America COMPETES Act of 2022, Section 30609), USICA does not include sustainability in its foreign policy agenda.

A key element in both bill's strategies to ensure global competitiveness into the far future is the expansion and adjustment of various trade policies. However, this section also represents an area of notable disagreement between both chambers, with the House mirroring few of the Senate's policy priorities.

The America COMPETES Act's unique trade policies include the Eliminating Global Market Distortions to Protect American Jobs Act of 2021, which strengthens trade remedy laws (America COMPETES Act of 2022, Section 102003); the Import Security and Fairness Act, which seeks to prevent foreign actors from exploiting the de minimis trade loophole (America COMPETES Act of 2022, Section 103002); and would put US\$ 22 billion towards the Trade Adjustment Assistance Act, providing support to workers, firms, and communities who are negatively impacted by trade (America COMPETES Act of 2022, Section 101102).

On the other hand, USICA's unique provisions include the appointment of an Inspector General to the Office of the U.S. Trade Representative (USTR) to increase accountability, oversight, and transparency (USICA, Section 73003); it would require USTR to identify and report upon countries that disrupt digital trade (USICA, Section 71011); it would create a Forced Labor Division within the United States Customs and Border Protection agency to investigate such crimes (USICA, Section 71001); and would create a process by which goods impacted by section 301 of the Trade Act can be excluded from its tariffs (USICA, Section 73001).



UNITED NATIONS

Series

ECLAC

Studies and Perspectives- Washington, D.C.

Issues published

A complete list as well as pdf files are available at

www.eclac.org/publicaciones

22. Towards a new industrial policy: the United States economic policy agenda post-COVID-19, Raquel Artecona and Helvia Velloso (LC/TS.2022/152, LC/WAS/TS.2022/3), 2022.
21. Multilateral development banks in Latin America: recent trends, the response to the pandemic, and the forthcoming role, Pablo Fleiss (LC/TS.2021/62, LC/WAS/TS.2021/2), 2021.
20. ECLA, Washington and Inter-American Economic Relations, 1948–1968, Isaac Cohen (LC/TS.2020/38, LC/WAS/TS.2020/1), 2020.
19. Financing development in Latin America and the Caribbean: the role and perspectives of multilateral development banks, Raquel Artecona, Marcelo Bisogno, Pablo Fleiss (LC/TS.2019/32, LC/WAS/TS.2019/1), 2019.
18. Sovereign credit ratings in Latin America and the Caribbean: trends and impact on debt spreads, Inés Bustillo, Daniel Perrotti and Helvia Velloso (LC/TS.2018/107, LC/WAS/TS.2018/6), 2018.
17. Labour issues in the digital economy, Raquel Artecona and Terence Chau (LC/TS.2017/66, LC/WAS/TS.2017/3), 2017.
16. Ensuring Incentives for Innovation and Access to Medicines, Raquel Artecona and Rosine M Plank-Brumback (LC/L.4248, LC/WAS/L.143), 2017.
15. Energías y políticas públicas en Estados Unidos: una relación virtuosa para el desarrollo de fuentes no convencionales, Inés Bustillo, Raquel Artecona, Isabel Makhoul, y Daniel E. Perrotti (LC/L.4093, LC/WAS/L.137), 2015.
14. Puerto Rico: economic headwinds and fiscal challenges, Inés Bustillo and Helvia Velloso (LC/L.4078, LC/WAS/L.136), 2015.
13. Global financial rulemaking and small economies, Raquel Artecona and Inés Bustillo (LC/L.4048, LC/WAS/L.134), 2015.

STUDIES AND PERSPECTIVES

Issues published:

- 22 Towards a new industrial policy
The United States economic policy agenda post-COVID-19
Raquel Artecona, Helvia Velloso
- 21 Multilateral development banks in Latin America
Recent trends, the response to the pandemic, and the forthcoming role
Pablo Fleiss
- 20 ECLA, Washington and Inter-American Economic Relations, 1948–1968
Isaac Cohen
- 19 Financing development in Latin America and the Caribbean
The role and perspectives of multilateral development banks
Raquel Artecona, Marcelo Bisogno, Pablo Fleiss



Economic Commission for Latin America and the Caribbean (ECLAC)
Comisión Económica para América Latina y el Caribe (CEPAL)
www.eclac.org



LC/TS.2022/152