

CAPITAL FORMATION 101

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May 2016



AMERICAN COUNCIL FOR CAPITAL FORMATION

Introduction to Capital Formation 101

It is a pleasure to write a few introductory words to *Capital Formation 101* by Dr. Pınar Çebi Wilber, Senior Economist at the American Council for Capital Formation (ACCF). When the ACCF was founded, one of the first tasks for Dr. Richard Rahn, the ACCF's first Executive Director, was to write and publish a document explaining "Capital Formation for Dummies." Now, four decades later, it is long past time for a new *Capital Formation 101* articulating what capital formation is all about and why it's important for a strong and vibrant economy. What has changed in those 40 years? The critical role capital plays in a free market remains the same but the structure and composition of the US and global economies have changed considerably.

The timing of *Capital Formation 101* could not be more appropriate with the 2016 presidential election looming.

William Galston, a policy advisor to President Clinton and Peggy Noonan, a primary speechwriter to President Reagan, now both columnists for the *Wall Street Journal*, recently within days of each other wrote about the millennials' economic naiveté. Galston wrote: "These millennials have no experience of a successful capitalist system and no memory of communism's failure. Small wonder, then, that as many of them look favorably on socialism (whatever they think it is) as on a market economy." Noonan wrote "In the young Sander's support is understandable: they've never been taught anything good about capitalism and in their lifetimes have seen it do nothing – nothing – to protect its own reputation."

Economic education is a continuing challenge and Dr. Wilber's *Capital Formation 101* can make a contribution.

Mark Bloomfield, President and CEO

About the Author

PINAR ÇEBİ WILBER, Ph.D. is a Senior Economist with the American Council for Capital Formation and an Adjunct Assistant Professor with Georgetown University. Her research interests are diversified and include energy policy, tax policy, international trade and finance, and general government policy. Recently, Pınar has researched issues related to climate change legislation, including the impact of such legislation on the U.S. economy. She has also done extensive research on the effect of government policies on retirement saving, as well as the use of annuities in retirement. Pınar has published various reports on different tax provisions and their impact on industry and the overall economy.

Prior to joining the ACCF, she was a visiting Assistant Professor at Washington and Lee University and an instructor in the Department of Economics at Georgetown University. She received her Ph.D. in economics from Georgetown University and a BA from Bilkent University, in Turkey. Pınar's articles have appeared in The Financial Times, Wall Street Journal, Marketwatch, Investor's Business Daily, multiple regional newspapers and many trade publications. She is also a contributor to The Hill.

What is Capital Formation?

Capital formation is expenditure to preserve and increase the stock of our nation's wealth. It is the accumulation of plant, equipment and inventories over time which provides the basis for real economic growth. However, global trends and changing economic structures, specifically the increasing prominence of the digital economy, requires an update of this definition to include digital capital that is composed of two types of assets: (1) traditionally physical assets such as routers, servers, and basic internet software and (2) intangible assets such as big data and analytics capabilities, patents, processes that can be licensed, and even brand equity.¹ Expenditures on digital capital can have long-lived impacts on a company's bottom line in the same manner as other capital assets.

Capital formation is generated by the investment of savings. High levels of savings are necessary for the constant updating of previous vintages of the capital stock. Constant replacement of our capital goods is needed as machines wear out and new technologies render old manufacturing techniques obsolete. In addition to adequate replacement investment, firms also need new investment to improve efficiency, expand production, and achieve product innovation. Digital capital also plays a key role in productivity enhancement. As put by Luke A. Stewart and Robert D. Atkinson, "Capital investment acts as a diffuser of innovation because innovation is embedded in new investment. For example, new personal computers contain better, faster operating systems and other new or redesigned software; they include hardware innovations such as touch screens and solid state drives that lower boot time to mere seconds."²

The American Council for Capital Formation released a primer on capital formation in October 1981, to inform policymakers and the public about the importance of capital to the U.S. economy. The issues that were raised in that primer are still relevant today and need to be highlighted given the rise of the populist approach to policymaking, the upcoming election, and the anemic growth experienced by the U.S. and world economies in recent years. The ACCF has updated its earlier primer with more recent data and new research in order to provide policymakers, the public and the media with strategies for restoring strong economic growth.

¹ Jacques Bughin and James Manyika "Measuring the Full Impact of Digital Capital," McKinsey Quarterly, July 2013, http://www.mckinsey.com/insights/high_tech_telecoms_internet/measuring_the_full_impact_of_digital_capital

² Luke A. Stewart and Robert D. Atkinson, "Restoring America's Lagging Investment in Capital Goods," The Information Technology and Innovation Foundation, October 2013, pg 2. <http://www2.itif.org/2013-restoring-americas-lagging-investment.pdf>

Why is Adequate Capital Formation Necessary?

Economic output is produced by combining various factors of production, including labor, land, capital and available technology. These factors of production must be increased or used more efficiently in order to achieve real economic growth.

First, for workers to provide their maximum contribution to the production of goods and services, they must use the most advanced equipment and tools available and have adequate education and training. These investments in both physical and human capital will boost labor productivity, thereby allowing for increased real wages and providing incentives for greater work effort. The resulting rise in economic activity will thus increase total income and total output.

Second, for capital equipment, structures, and the land upon which they are located to be efficient, funds must be constantly plowed back into new and innovative machinery and more efficient designs for buildings and land use. The capital that is efficient today may not be efficient tomorrow.

Third, for America to keep ahead of its foreign competitors, research and development must be encouraged to expand the frontiers of technological knowledge.

What Factors Interfere with Capital Formation?

Federal tax,³ spending, and regulatory policies may interfere with capital formation and diminish the prospects for economic growth to the extent that they create a different level and distribution of capital goods than would have otherwise existed. Such Federal policies have interfered with the necessary expansion of capital formation in recent years.

According to a new book by Robert Gordon "The Rise and Fall of American Growth: The U.S. Standard of Living Since the Civil War,"⁴ the rapid economic growth for the U.S. is a thing of the past and new technologies, such as the internet, cannot be expected to boost both growth and productivity levels similar to advances between 1870 and 1970. Gordon argues that the some of the crucial inventions such as telephones, airplanes, television, synthetic fibers, plastics and assembly lines and their application to ease our daily lives and increase our efficiency cannot be repeated. Time will tell whether Prof. Gordon's predictions are correct. However, if this is the case, federal policies to support and encourage lagging capital investment become much more important.

First, U.S. tax laws contain an inherent bias against saving, investment, and work effort. Our progressive tax rates reduce after-tax returns to work effort, thus decreasing the volume of work effort. At the same time, the relative "price" of leisure is reduced, further discouraging labor market participation. In a similar fashion, saving and investment are taxed more severely than consumption. A dollar of income earned and spent is taxed only once.⁵ But a dollar of income saved is taxed when first earned, and, if invested, taxed over and over again as the returns to saving accrue to an

³ While state and local taxes also have important impacts on capital formation, this white paper concentrates on federal policies.

⁴ Robert J. Gordon, "The Rise and Fall of American Growth: The U.S. Standard of Living Since the Civil War," January 12 2016, Princeton University Press.

⁵ This analysis assumes only the existence of Federal income taxes.

individual. This taxation of capital gains, dividend, and interest income constitutes a tax bias against saving and investment and toward consumption. Economic theory suggests that taxing consumption is more conducive to economic growth compared to taxing income.⁶

In general, economists agree that taxes should be designed so that the relative prices of work effort and leisure, and of consumption and saving (and investment) are not disturbed after their imposition. The development of such "neutral" tax policies should be a major goal of tax reform. These "neutral" tax policies would not differentially alter the prices of the necessary ingredients of production: work effort, saving, and investment.

Second, the deficits generated by federal spending in excess of revenues represent claims against private resources and, as such, can preempt private sector activity. As a result, government financing of the deficit may "crowd-out" private sector needs in credit markets. For these reasons, Federal finances have become a major concern of policymakers today. In 2000, budget outlays on a fiscal year basis were 17.6 percent of GDP.⁷ By 2015, Federal claims on total output had grown to 20.7 percent. According to Congressional Budget Office's 2015 Long-Term Budget Outlook, outlays will continue to grow, reaching 25.3 percent of GDP in 2040, increasing U.S. budget deficit. These trends underscore the need for fiscal discipline to encourage real rate of growth in total output, lower capital costs, and encourage private sector capital formation.

Third, the rapid expansion of government regulation in recent years has resulted in high compliance costs to firms, with such costs being ultimately reflected in final prices to the public.

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Regulation expert Murray Weidenbaum had noted that these costs have also had the effect of displacing productive investment and encouraging "defensive" research and development rather than innovative product research.⁸ For example, as firms devote greater portions of their resources to meeting Federal regulatory requirements; new product development is delayed, increasing the final cost of bringing a new product to the market. If a firm is already operating efficiently, the increased costs caused by these government regulations may well result in either lower profit margins, which result in even fewer resources being devoted to product innovation, or higher prices to the public.

Another concern with regulations is their impact on entrepreneurship. According to a body of economic literature, regulations may restrict entry, deter competition, and inhibit the disciplinary effect of competition on existing market players.⁹

⁶ For a detailed discussion, see Robert Carroll and Alan D. Viard, "Progressive Consumption Taxation," AEI, 2012.

⁷ Office of Management and Budget, Historical Tables, Table 1.2—Summary of Receipts, Outlays, and Surpluses or Deficits (-) as Percentages of GDP: 1930–2021, <https://www.whitehouse.gov/omb/budget/Historical>

⁸ Murray Weidenbaum, "Costs of Regulation and Benefits of Reform," St. Louis: Center for the Study of American Business, November 1980.

⁹ Erin L. Scott, "The Impact of Regulation on Entrepreneurship and Innovation," Kauffman Dissertation Executive Summary, 2011. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2334629

Of course, this is not to say that all regulation is bad. Over the years, U.S. undertook major regulations to better protect human health and environment. However, as President Reagan's 1981 Executive Order stated "Regulatory action shall not be undertaken unless the potential benefits to society for the regulation outweigh the potential costs to society."¹⁰ With careful analysis of the costs and benefits of federal regulations, the number of regulations that drain capital from productive to nonproductive uses can be reduced, thereby encouraging more private capital formation.

Do We Have Adequate Levels of Capital Formation?

Recent statistics on the economic health of the U.S. reflect a softening of vital indicators. Although the U.S. still produces the second largest share of world output after China, investment and productivity are sluggish and our international economic performance is lackluster. A closer look at the levels and trends of

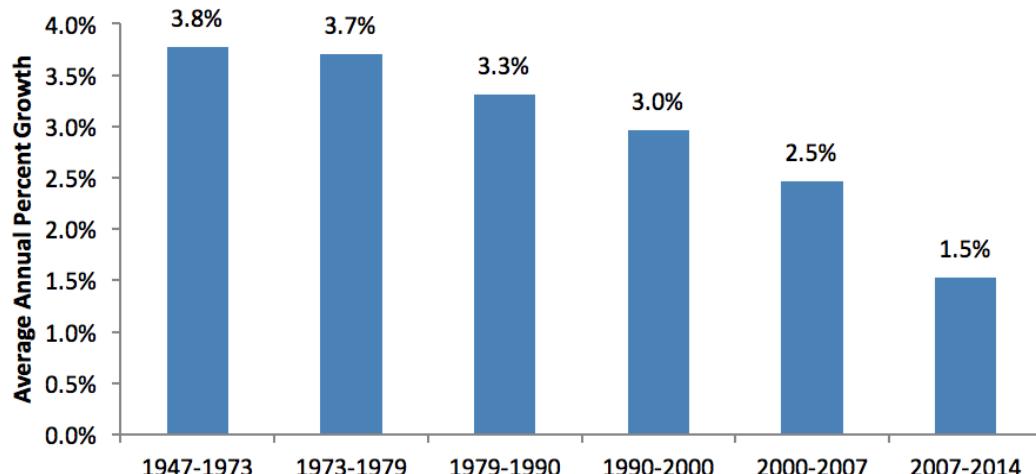
major economic aggregates and their components provide a better understanding of the reasons behind the recent slowdown in economic indicators.

The Recent Trends in Investment

In a classical formulation, the factors contributing to economic growth are labor, land, capital and technology. These factors are all interrelated in their contribution to real output.

Increases in investment will have positive effect on economic growth by increasing the quantity and quality of capital per employee. However, over the years, both the investment and net stock of private capital shown a disappointing growth.¹¹ **Figure 1** shows the average annual growth rates in the real net stock of private nonresidential fixed assets for select periods.¹² While between 1947 and 1973, the net stock of fixed assets grew at an average rate of 3.8 percent, after 2007 (the period that started with the great recession), the average growth rate was only 1.5 percent.

Figure 1: Growth of Real Net Stock of Private Nonresidential Fixed Assets Over Selected Time Periods



Source: U.S. Bureau of Economic Analysis, Fixed Assets Accounts Table. (Accessed on January 2016.)

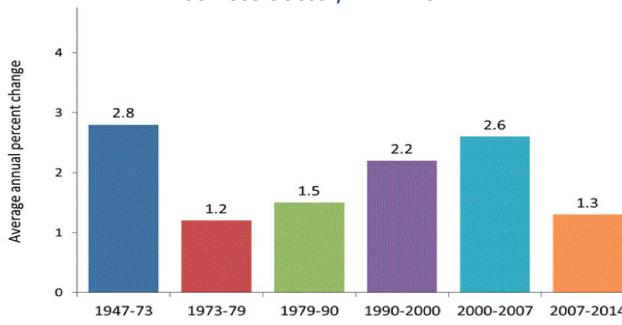
¹⁰The provisions of Executive Order 12291 of Feb. 17, 1981, appear at 46 FR 13193, 3 CFR, 1981 Comp., p. 127, unless otherwise noted. <http://www.archives.gov/federal-register/codification/executive-order/12291.html>

¹¹For a detailed discussion, see Thomas J. Duesterberg and Donald A. Norman, "Why is Capital Investment Consistently Weak in the 21st Century U.S. Economy?" The Aspen Institute and MAPI Foundation, May 2015, <http://acfc.org/why-is-capital-investment-consistently-weak-in-the-21st-century-u-s-economy/>

¹²Net stock is gross stock less replacement requirements or depreciation.

This decline in net investment growth, combined with changes in labor structure and composition (such as the retirement of the baby boomers with lots of human capital and the lack of skilled labor, especially in the manufacturing sector), resulted in slower growth in labor productivity. **Figure 2** depicts average labor productivity growth, for the same time periods shown in Figure 1. Between 1947 and 1973, labor productivity grew at an average rate of 2.8 percent. After 2007, the average growth rate was only 1.3 percent.

Figure 2: Labor Productivity Change in the Nonfarm Business Sector, 1947-2014

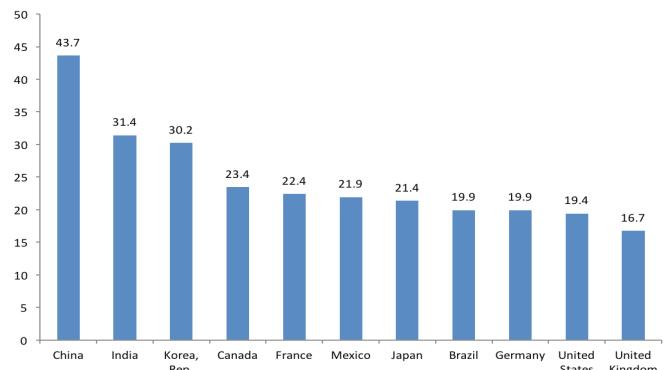


Source: U.S. Department of Labor, Bureau of Labor Statistics. (Accessed on January 2016) <http://www.bls.gov/lpc/prodbyr.htm>

Domestic capital formation not only declined over time, but compared unfavorably relative to our top ten trading partners. **Figure 3** shows the U.S. lagging behind all countries except the U.K. in gross fixed capital formation as a percent of GDP for 2007-2014 period. This record reflects poorly on our ability to replace and expand the capital stock with new and innovative equipment, so important to improving the productivity of our work force.

Research and development expenditures, through their influence on technology, also contribute to increases in labor productivity. The relationship between R&D expenditures and productivity growth has been analyzed by many economists. According to a recent CBO analysis, the estimates are wide ranging, spanning from zero to substantial. However as stated in the paper "Most of the estimates lie somewhere between

Figure 3: Gross Fixed Capital Formation as a Percent of GDP: U.S. and Top 10 Trading Partners (Average 2007-2014)



Source: World Development Indicators, World Bank, accessed on April 2016, <http://data.worldbank.org/indicator/NE.GDI.FTOT.ZS/countries?display=default>

the two extremes, and as a result, a consensus has formed around the view that R&D spending has a significantly positive effect on productivity growth, with a rate of return that is about the same size as (or perhaps slightly larger than) the rate of return on conventional investments."¹³

Despite the importance of R&D, there is mounting evidence that the U.S. lead in technological advance has stagnated over the last decade. As shown in **Table 1**, R&D as a percent of GDP has grown faster in many of our top trading partners (which include the top 10 economies in the world based on GDP). In 2000, the U.S. was ranked second among these countries in terms of R&D as a percent of GDP. By 2013, the U.S. had fallen to fourth, after Korea, Japan, and Germany.

"Domestic capital formation not only declined over time, but compared unfavorably relative to our top ten trading partners."

¹³ "R&D and Productivity Growth," Congressional Budget Office, June 2005, pg1. <https://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/64xx/doc6482/06-17-r-d.pdf>

Table 1: Total Expenditure For Research and Development as a Percent of GDP (2000-2014)*

	Mexico	China	UK	Canada	France	Germany	USA	Korea	Japan
2000	0.33	0.90	1.72	1.87	2.08	2.39	2.62	2.18	3.00
2001	0.35	0.95	1.71	2.04	2.13	2.39	2.64	2.34	3.07
2002	0.39	1.06	1.72	1.99	2.17	2.42	2.55	2.27	3.12
2003	0.39	1.13	1.67	1.99	2.11	2.46	2.55	2.35	3.14
2004	0.39	1.22	1.61	2.01	2.09	2.42	2.49	2.53	3.13
2005	0.40	1.32	1.63	1.99	2.04	2.42	2.51	2.63	3.31
2006	0.37	1.38	1.65	1.96	2.05	2.46	2.55	2.83	3.41
2007	0.37	1.38	1.68	1.92	2.02	2.45	2.63	3.00	3.46
2008	0.40	1.46	1.69	1.87	2.06	2.60	2.77	3.12	3.47
2009	0.43	1.68	1.74	1.92	2.21	2.72	2.82	3.29	3.36
2010	0.45	1.73	1.69	1.84	2.18	2.71	2.74	3.47	3.25
2011	0.43	1.79	1.69	1.80	2.19	2.79	2.76	3.74	3.38
2012	0.43	1.93	1.62	1.79	2.23	2.87	2.70	4.03	3.34
2013	0.50	2.01	1.66	1.69	2.24	2.83	2.74	4.15	3.47
2014	0.54	2.05	1.70	1.61	2.26	2.84		4.29	3.58
Average 2000-2014	0.41	1.47	1.68	1.89	2.14	2.58	2.65	3.08	3.30

*For U.S., the average is for years 2000-2013

Source: OECD (2016), Gross domestic spending on R&D (indicator). doi: 10.1787/d8b068b4-en (Accessed on 19 April 2016), <https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm>

Increases in capital investment and R&D are not the only factors needed to boost labor productivity. Investment in human capital through education and training results in an increase in the quality of the work force, which in turn raises productivity. Educational progress affects productivity by increasing the number of engineers, scientists, and inventors who generate innovations, and entrepreneurs who make innovative investment decisions. But data shows that, especially in science, technology, engineering and mathematics (STEM) fields, the U.S. is lacking. According to National Math and Science Initiative (NMSI) data, only 44 percent of 2013 U.S. high school graduates were ready for college level math and only 36 percent were ready for college level science.¹⁴ Among the students who entered STEM fields between 2003 and 2009, a total of 48 percent of bachelor's degree and 69 percent of associate's

degree students had left these fields by spring 2009. Half of these people switched to non-STEM fields and the rest left without earning a degree.¹⁵

When we look at the impact of these numbers on U.S. R&D effectiveness, according to NMSI data, in 2009 U.S. scientists published nearly 29 percent of the research papers in the most influential journals, down from 40 percent in 1981.¹⁶

The Relationship of Saving and Investment

As an economy devotes a larger and larger share of its output to consumption outlays, both private and public, fewer resources are left for saving and productive investment. Under the normal workings of the marketplace, individual and corporate savings provide the pool of funds from which

¹⁴ National Math and Science Initiative, Stem Education and Workforce, January 13, 2014. <https://www.nms.org/AboutNMSI/TheSTEMCrisis/STEMEducationStatistics.aspx>

¹⁵ "STEM Attrition: College Students' Paths Into and Out of STEM Fields Statistical Analysis Report," U.S. Department of Education, November 2013. <http://nces.ed.gov/pubs2014/2014001rev.pdf>

¹⁶ National Math and Science Initiative, Stem Education and Workforce, January 13, 2014. <https://www.nms.org/AboutNMSI/TheSTEMCrisis/STEMEducationStatistics.aspx>

business can borrow or draw on to invest. Without a healthy supply of saving, businesses must compete with each other for dwindling amount of loanable funds and the price of such funds will rise, thereby curtailing the desired level of investment.¹⁷

The Recent Trends in Saving

Recent figures comparing household saving rates as a percent of household disposable income among the U.S.'s top trading partners show that the U.S. is in the middle of the pack, averaging 5.5 percent between 2007 and 2014. According to **Figure 4**, our trading partners' saving rates ranged from 1.2 percent (Japan) to 38 percent (China). Many experts think that U.S. personal saving rate is not nearly enough, especially to ensure a comfortable retirement for individuals.¹⁸ According to a recent report by the Center for American Progress, nearly one-third of working Americans do not have a pension or any savings.¹⁹ For many, Social Security income is still the source of sole support during retirement years. However, questions about the

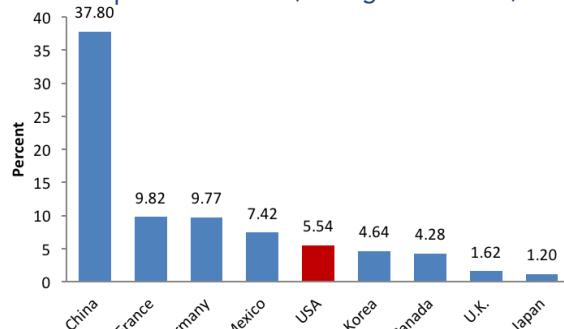
financial health of the Social Security system and the continuing retirement of the baby boomers have increased the importance of the other income sources financed by personal savings. According to the 2015 Social Security Trustees Report, it is expected that Social Security will be able to pay full benefits until 2034. After 2034, the income generated by payroll taxes and other sources will only be sufficient to pay 79 percent of scheduled benefits.²⁰ The shortfall in Social Security makes it even more important to find ways to encourage personal savings.

The Tax Burden on Capital

One way to increase rates of capital formation in the U.S. is to reduce the existing tax bias against saving and investment. Reducing the tax burden on income from capital services would lower the cost of capital relative to consumption, thus providing an incentive for individuals to save and invest rather than spend.²¹ Reducing the cost of capital in the U.S. would also boost capital formation by attracting inflows of foreign capital.

The current U.S. tax code can be described as a hybrid system that relies heavily on an income tax with some features that resemble a consumption tax. A pure consumption tax is defined as a system that taxes individuals on the goods and services they purchase and exempts all saving from tax. The current U.S. tax code contains, tax preferred savings vehicles, such as IRA's and 401ks; these are features of the tax code that act like a consumption tax. Individuals can contribute pre-tax dollars to these accounts and the tax on the accumulation of savings is deferred until the funds are withdrawn.

Figure 4: Household Saving as a Percent of Household Disposable Income (Average 2007-2014)*



*For China and Mexico, the average is for years 2007-2013.

Source: OECD (2016), Household savings (indicator). doi: 10.1787/cfc6f499-en (Accessed on 19 April 2016) <https://data.oecd.org/hha/household-savings.htm#indicator-chart>

¹⁷ Foreign Direct Investment is also an important source of financing to cover the fiscal deficit and supplements inadequate domestic resources.

¹⁸ Pinar Cebi Wilber, "DOL's Retirement Advice Rule: Helping or Harming Sound Retirement Planning?" American Council for Capital Formation, November 2015. <http://accf.org/dols-retirement-advice-rule-helping-or-harming-sound-retirement-planning/>

¹⁹ Keith Miller, David Madland and Christian E. Weller, "The Reality of Retirement Crisis," January 2015, Center for American Progress, <https://www.americanprogress.org/issues/economy/report/2015/01/26/105394/the-reality-of-the-retirement-crisis/>

²⁰ "The 2015 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds," <http://www.ssa.gov/oact/tr/2015/tr2015.pdf>

²¹ Ernst & Young, "Impact of Two Proposed Federal Tax Reform Plans on Business Investment Incentives: Alternative Approaches to Business Tax Reform," Prepared for ACCF, April 2014. <http://accf.org/special-report-how-will-alternative-tax-reform-plans-impact-business-investment-incentives/>

"One way to increase rates of capital formation in the U.S. is to reduce the existing tax bias against saving and investment. Reducing the tax burden on income from capital services would lower the cost of capital relative to consumption, thus providing an incentive for individuals to save and invest rather than spend."

In addition, the current tax system allows some investments to be expensed (deducted from taxable income in the first year). There is also accelerated depreciation which reduces the tax burden on some investment. Even though these "consumption tax like features" reduce the distortionary impact of the current tax system, they are selective and limited in scope. Most economists believe that switching to a system where the tax base depends primarily on consumption rather than income could increase saving, investment,²² real output, and long run economic growth.

In addition, the current tax treatment of dividends and capital gains both at individual and corporate level retains a substantial bias toward consumption. The outdated corporate tax system in U.S. provides another burden for capital formation.

Taxation of Capital Gains and Dividends

A recent report²³ by Ernst & Young LLP compares the top statutory long term capital gains and dividend tax rates among major economies as well as the major trading partners of the U.S. The report also looks at these rates under a more comprehensive approach that combines corporate level taxes with investor-level taxes on dividends and capital gains. The top U.S. tax rate on long term capital gains and dividends increased over the last couple years as a result of:

- An increase in the top federal tax rate on dividends and capital gains from 15% to 20% beginning in 2013.
- The introduction of a 3.8% tax on investment income enacted under the 2010 health insurance reform.

Table 2 and **Table 3** provide an international comparison of the top long term capital gains and dividends tax rates as well as the integrated tax rates for the years 2000 and 2014. As a result of the increases mentioned above, as well as the worldwide trend of reducing statutory corporate income tax rates, the U.S. integrated tax rate is among the highest for developed nations. According to **Table 2**, in 2014, the top U.S. integrated long term capital gains tax rate was 56.3%, while the average of OECD and BRIC countries, excluding the U.S., was 40.3%. Among the 38 countries surveyed, the only country with a higher integrated rate was France.

Table 3 shows the international comparison of the top integrated dividend tax rate. In 2014, the top U.S. integrated rate was 56.2, while the average rate among OECD and BRIC countries, excluding the U.S., was 44.5%. Similar to the integrated long term capital gains tax rate, France was the only country with a higher rate than the U.S. (64.4%).

²² Pinar Cebi Wilber and Margo Thorning, "Switching to a Consumption- Based Tax from the Current Income Tax," July 2013, American Council for Capital Formation. <http://accf.org/wp-content/uploads/2013/07/2013-ACCF-CPR-Consumption-Tax-Paper-FINAL.pdf>

²³ "Corporate Dividend and Capital Gains Taxation: A Comparison of the United States to other Developed Nations," Prepared for the Alliance for Savings and Investment, Ernst & Young, April 2015. <http://theasi.org/assets/EY-ASI-2014-International-Comparison-of-Top-Dividend-and-Capital-Gains-Tax-Rates.pdf>

It is important to look at integrated rates for both capital gains and dividends to show how the double tax on corporate profits is an impediment to important economic decisions and international competitiveness. According to the E&Y report and the data highlighted above, most developed countries provide relief for this double taxation to mitigate the adverse impacts on economic performance since double taxation:

- Discourages capital investment, especially in corporate sector, reducing capital formation and hence living standards
- Favors debt over equity financing, which could increase the risk during economic downturns for certain sectors
- Discourages the payment of dividends.

As shown above, compared to other nations, the U.S. has a relatively high tax rate on corporate income as it is distributed to individuals in the form of dividends. But what about the taxation of earnings at the corporate level? Corporations must have enough earnings to expand and finance productive investment. A review of the tax treatment of corporate saving and investment in the U.S. follows.

The Tax Treatment of Corporate Saving and Investment

Corporations contribute to capital formation by reinvesting their after tax earnings in tangibles such as plant, equipment and inventories. They also contribute to capital formation by making expenditures on intangibles, such as through research and development. However, U.S. corporations are handicapped by antiquated corporate tax laws that have not been updated since the last major business tax reform in 1986. On the contrary, many OECD and BRIC countries have taken major steps to reform their corporate tax systems to match the changing global business

"According to research and data prepared by Katarzyna Bilicka and Michael Devereaux, the U.S. is not only disadvantaged based on its high statutory corporate tax rate but it has also 5th highest EMTR among OECD and BRIC countries."

realities. **Table 4** provides the top corporate tax rates by country in 2000 and 2014. In 2000, the U.S. top corporate rate (including taxes imposed both at federal and state level) was 39.3%. The OECD average for the same year, excluding U.S., was 37%. By 2014, the gap between OECD average and U.S. had widened significantly. Due to major reforms in member countries, the OECD average has fallen to 28.8% while U.S. rate remains at 39%.

A higher tax rate raises the effective cost of capital, the rate of return that an investment project must earn to both cover taxes and provide investors with their required after tax rate of return. Additional investment will be undertaken until the marginal gain from investment is equal to the cost of capital. The effective marginal tax rate (EMTR) on investment measures how the corporate tax increases the cost of capital.

According to research and data prepared by Katarzyna Bilicka and Michael Devereaux,²⁴ the U.S. is not only disadvantaged based on its high statutory corporate tax rate but it has also 5th highest EMTR among OECD and BRIC countries.

²⁴Katarzyna Bilicka and Michael Devereaux, "CBT Corporate tax ranking 2012," June 2012, Oxford University Centre for Business Taxation, https://www.sbs.ox.ac.uk/sites/default/files/Business_Taxation/Docs/Publications/Reports/cbt-tax-ranking-2012.pdf. Updated data is available at <http://www.sbs.ox.ac.uk/faculty-research/tax/publications/data>

(See **Figure 5**). Many experts believed the current U.S. corporate tax structure is one of the reasons for the current lagging investment.²⁵ The 2015 Economic Report of the President²⁶ recognizes the problems associated with the current business tax system and set business tax reform goals "to improve the quantity and quality of U.S. investment and thus productivity and output."

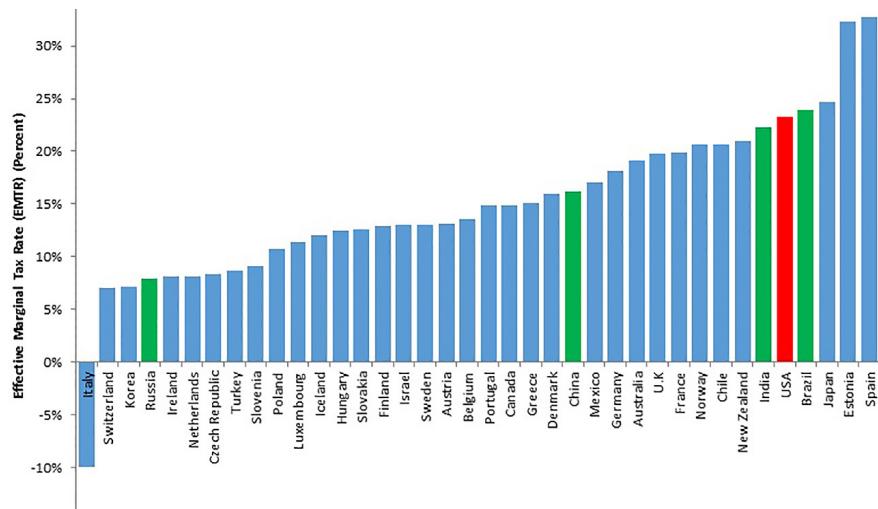
Economic Drag of Regulation

As mentioned in the previous section, excessive regulation in the U.S. is a hurdle for capital formation. President Obama's State of the Union emphasized the need to fix U.S. regulatory system, stating that "...there are outdated regulations that need to be changed, and there's red tape that needs to be cut"²⁷

In its annual Global Competitiveness Report, World Economic Forum ranks countries based on various criteria that impact their overall competitiveness, such as institutions, infrastructure, macro environment and education. Based on the overall score, the U.S. ranks third out of 140 countries, behind Switzerland and Singapore.²⁸ However, when ranked based on the burden of government regulation, the U.S. ranking is 51.²⁹ It is no wonder that government red tape is frustrating for U.S. businesses.

According to a study conducted by Nicole V. Crain and W. Mark Crain,³⁰ in 2012, the average U.S. company paid \$9,991 (in 2014 dollars) per employee per year to comply with federal regulations. The cost was higher for an average manufacturing company: \$19,564. The burden was even worse for a small manufacturer with less than 50 employees: \$34,671. When total burden of federal regulations

Figure 5: Ranking of Effective Marginal Tax Rates, OECD and BRIC Countries, 2014



Source: Katarzyna Bilicka and Michael Devereaux, CBT Corporate Tax Ranking Data, accessed on January 2016, <http://www.sbs.ox.ac.uk/faculty-research/tax/publications/data>

²⁵ Thomas J. Duesterberg and Donald A. Norman, "Why is Capital Investment Consistently Weak in the 21st Century U.S. Economy?" May 2015, Aspen Institute and MAPI, <http://accf.org/why-is-capital-investment-consistently-weak-in-the-21st-century-u-s-economy/>

²⁶ Council of Economic Advisors, Economic Report of the President, 2015, https://www.whitehouse.gov/sites/default/files/docs/cea_2015_erp_complete.pdf

²⁷ State of the Union 2016, <http://www.cnn.com/2016/01/12/politics/state-of-the-union-2016-transcript-full-text/>

²⁸ Global Competitiveness Report, 2015-2016, World Economic Forum, <http://reports.weforum.org/global-competitiveness-report-2015-2016/>

²⁹ The U.S. has a rating of 3.6 out of 7. The rating is calculated based on the question: "In your country, how burdensome is it for companies to comply with public administration's requirements (e.g. permits, regulations, reporting)? [1 = extremely burdensome; 7 = not burdensome at all]"

³⁰ W. Mark Crain and Nicole V. Crain, "The Cost of Federal Regulation to the U.S. Economy, Manufacturing and Small Business," A Report for the National Association of Manufacturers, September 10, 2014. <http://www.nam.org/Data-and-Reports/Cost-of-Federal-Regulations-Federal-Regulation-Full-Study.pdf>

are tallied the sum is staggering: The authors estimate the total burden of federal regulations was a little over \$2 trillion in 2012 (in 2014 dollars).

According to a recent study by NERA³¹ that analyzed federal regulations between 1998 and 2011, "the cumulative inflation adjusted cost of compliance with major regulations affecting the manufacturing sector grew by an annualized rate of 7.6%. Over this same period, U.S. inflation adjusted GDP growth average 2.2% a year, and the annual growth in the physical volume of manufacturing sector output averaged a mere 0.4%."

All these numbers indicate the increasingly negative impact of regulations on capital formation and the overall U.S. economy. It is commendable that both the Obama Administration and many in U.S. Congress are making regulatory reform a key part of their policy agendas.

"A review of tax treatment of capital gains and dividends across countries shows that the U.S. has the second highest integrated tax rate among OECD and BRIC countries. Furthermore, the U.S. corporate tax structure is considered to be one of the reasons for its lagging investment."

Conclusion: An Agenda for Economic Growth

This Capital Formation Primer has reviewed the record of the components of economic growth in the U.S. today. U.S. capital investment is falling behind relative to our competitors and personal saving rates are far from sufficient. A review of tax treatment of capital gains and dividends across countries shows that the U.S. has the second highest integrated tax rate among OECD and BRIC countries. Furthermore, the U.S. corporate tax structure is considered to be one of the reasons for its lagging investment.

There are signs that the direction of public policy is changing. Tax, spending and regulatory policies are now being carefully examined in light of their effects on capital formation. There is increased talk of moving towards a consumed-income tax system to ease the tax bias against saving and investment. Among the constructive areas of future tax reform are proposals to reduce the corporate income tax rate and bring the business tax system into the 21st century. Tax and additional incentives for personal savings, especially in the retirement arena, are being considered to provide a more secure future for U.S. retirees.

Budget reform should continue to aim at controlling the projected acceleration in the ratio of Federal spending to GDP. Future actions will be needed to reduce the Federal budget deficit. Finally, regulatory policy, so vital to any capital formation initiative, should maintain its emphasis on ameliorating the costly and burdensome restraints on productive saving and investment.

³¹ "Macroeconomic Impacts of Federal Regulation of the Manufacturing Sector," NERA Economic Consulting, Commissioned by Manufacturers Alliance for Productivity and Innovation, August 21, 2012, https://www.mapi.net/system/files/attachments/files/NERA_MAPI_FinalReport_0_0.pdf

Table 2. Top Integrated Long-term Capital Gains Tax Rate by Country, 2000-2014

Country	Top long-term capital gains tax rate (2000)	Integrated capital gains tax rate (2000)	Top long-term capital gains tax rate (2014)	Integrated capital gains tax rate (2014)
GDP-weighted average				
OECD & BRIC (excl. US)	18.8	48.7	17.5	40.3
OECD (excl. US)	19.0	49.0	24.3	45.9
Unweighted average				
OECD & BRIC (excl. US)	19.1	45.4	18.5	39.0
OECD (excl. US)	19.1	45.2	19.9	39.7
OECD countries				
Australia	47.0	65.0	22.5	45.8
Austria	0.0	34.0	25.0	43.8
Belgium	0.0	40.2	0.0	34.0
Canada	36.7	63.5	23.6	43.7
Chile	15.0	27.8	20.0	36.0
Czech Republic	32.0	53.1	0.0	19.0
Denmark	40.0	59.2	42.0	56.2
Estonia	26.0	45.2	21.0	37.6
Finland	28.0	48.9	32.0	45.6
France	26.0	54.0	60.5	74.9
Germany	0.0	43.3	25.0	47.6
Greece	0.0	35.0	15.0	37.1
Hungary	20.0	34.4	16.0	32.0
Iceland	38.3	56.8	20.0	36.0
Ireland	20.0	39.2	33.0	41.4
Israel	50.0	68.0	25.0	44.9
Italy	12.5	44.9	26.0	46.4
Japan	26.0	56.3	20.0	49.6
Korea	20.0	44.6	0.0	24.2
Luxembourg	0.0	37.5	0.0	29.2
Mexico	0.0	35.0	10.0	37.0
Netherlands	0.0	35.0	0.0	25.0
New Zealand	0.0	33.0	0.0	28.0
Norway	28.0	48.2	27.0	46.7
Poland	0.0	30.0	19.0	34.4
Portugal	0.0	35.2	28.0	50.7
Slovak Republic	42.0	58.8	25.0	41.5
Slovenia	50.0	62.5	0.0	17.0
Spain	20.0	48.0	27.0	48.9
Sweden	30.0	49.6	30.0	45.4
Switzerland	0.0	24.9	0.0	21.1
Turkey	0.0	33.0	35.0	48.0
United Kingdom	24.0	46.8	28.0	43.1
United States	25.0	54.5	28.3	56.3
BRIC countries				
Brazil	15.0	46.5	15.0	36.3
Russia	30.0	51.0	13.0	30.4
India	10.0	44.7	0.0	40.0
China	20.0	46.4	0.0	25.0

Note: Weighted average based on each country's GDP. Rates include taxes imposed by both central and subnational governments.

Source: EY, *Worldwide Personal Tax Guide*, 2014 and EY analysis.

"Corporate Dividend and Capital Gains Taxation: A Comparison of the United States to other Developed Nations," Prepared for the Alliance for Savings and Investment, Ernst & Young, April 2015. <http://theasi.org/assets/EY-ASI-2014-International-Comparison-of-Top-Dividend-and-Capital-Gains-Tax-Rates.pdf>

Table 3. Top Integrated Dividend Tax Rate by Country, 2000-2014

Country	Top dividend tax rate (2000)	Integrated dividend tax rate (2000)	Top dividend tax rate (2014)	Integrated dividend tax rate (2014)
GDP-weighted average				
OECD & BRIC (excl. US)	29.2	55.1	22.9	44.5
OECD (excl. US)	31.2	56.6	26.6	47.7
Unweighted average				
OECD & BRIC (excl. US)	22.8	48.1	22.4	42.0
OECD (excl. US)	23.8	48.5	23.6	42.6
OECD countries				
Australia	22.0	48.5	23.5	46.5
Austria	25.0	50.5	25.0	43.8
Belgium	15.0	49.1	25.0	50.5
Canada	32.3	61.0	33.8	51.2
Chile	35.3	45.0	25.0	40.0
Czech Republic	15.0	41.4	15.0	31.2
Denmark	40.0	59.2	42.0	56.2
Estonia	0.0	26.0	0.0	21.0
Finland	0.0	29.0	27.2	41.8
France	40.8	63.2	44.0	64.4
Germany	31.1	60.9	26.4	48.6
Greece	0.0	35.0	10.0	33.4
Hungary	35.0	46.7	16.0	32.0
Iceland	10.0	37.0	20.0	36.0
Ireland	44.0	57.4	48.0	54.5
Israel	25.0	52.0	30.0	48.6
Italy	12.5	44.9	20.0	42.0
Japan	43.6	66.7	20.3	49.8
Korea	20.0	44.6	35.4	51.0
Luxembourg	23.6	52.2	20.0	43.4
Mexico	0.0	35.0	17.1	42.0
Netherlands	60.0	74.0	25.0	43.8
New Zealand	8.9	39.0	6.9	33.0
Norway	0.0	28.0	27.0	46.7
Poland	20.0	44.0	19.0	34.4
Portugal	25.0	51.4	28.0	50.7
Slovak Republic	15.0	39.7	0.0	22.0
Slovenia	30.0	47.5	25.0	37.8
Spain	27.2	52.7	27.0	48.9
Sweden	30.0	49.6	30.0	45.4
Switzerland	42.1	56.5	20.0	36.9
Turkey	31.2	65.0	17.5	34.0
United Kingdom	25.0	47.5	30.6	45.1
United States	44.8	66.5	28.2	56.2
BRIC countries				
Brazil	15.0	46.5	0.0	34.0
Russia	15.0	40.5	9.0	27.2
India	10.0	44.7	20.5	47.5
China	20.0	46.4	20.0	40.0

Note: Weighted average based on each country's GDP. Rates include taxes imposed by both central and subnational governments.

Source: OECD, *Table II.4 - Overall statutory tax rates on dividend income* and EY analysis (BRIC countries and United States).

"Corporate Dividend and Capital Gains Taxation: A Comparison of the United States to other Developed Nations," Prepared for the Alliance for Savings and Investment, Ernst & Young, April 2015. <http://theasi.org/assets/EY-ASI-2014-International-Comparison-of-Top-Dividend-and-Capital-Gains-Tax-Rates.pdf>

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Table 4. Top Corporate Tax Rate by Country, 2000-2014

Country	Top corporate tax rate (2000)	Top corporate tax rate (2014)
GDP-weighted average		
OECD and BRIC (excl. US)	36.7	28.1
OECD (excl. US)	37.0	28.8
Unweighted average		
OECD and BRIC (excl. US)	32.3	25.3
OECD (excl. US)	32.0	24.9
OECD countries		
Australia	34.0	30.0
Austria	34.0	25.0
Belgium	40.2	34.0
Canada	42.4	26.3
Chile	15.0	20.0
Czech Republic	31.0	19.0
Denmark	32.0	24.5
Estonia	26.0	21.0
Finland	29.0	20.0
France	37.8	36.4
Germany	43.3	30.2
Greece	35.0	26.0
Hungary	18.0	19.0
Iceland	30.0	20.0
Ireland	24.0	12.5
Israel	36.0	26.5
Italy	37.0	27.5
Japan	40.9	37.0
Korea	30.8	24.2
Luxembourg	37.5	29.2
Mexico	35.0	30.0
Netherlands	35.0	25.0
New Zealand	33.0	28.0
Norway	28.0	27.0
Poland	30.0	19.0
Portugal	35.2	31.5
Slovak Republic	29.0	22.0
Slovenia	25.0	17.0
Spain	35.0	30.0
Sweden	28.0	22.0
Switzerland	24.9	21.1
Turkey	33.0	20.0
United Kingdom	30.0	21.0
United States	39.3	39.0
BRIC countries		
Brazil	37.0	34.0
Russia	30.0	20.0
India	38.5	34.0
China	33.0	25.0

Note: Weighted average based on each country's GDP. Rates include taxes imposed by both central and subnational governments.

Source: OECD, *Table II.4 - Overall statutory tax rates on dividend income* and EY analysis and EY analysis (BRIC countries and United States).

"Corporate Dividend and Capital Gains Taxation: A Comparison of the United States to other Developed Nations," Prepared for the Alliance for Savings and Investment, Ernst & Young, April 2015. <http://theasi.org/assets/EY-ASI-2014-International-Comparison-of-Top-Dividend-and-Capital-Gains-Tax-Rates.pdf>



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