

America's Role in the Making of Japan's Economic Miracle *

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Abstract

The postwar rise of Japan would not have been possible without Japan's alliance with the United States. This claim has been made by policy makers, political scientists, economists, historians, and journalists on both sides of the Pacific, but no study has yet tested it with modern statistical methods. In this article, we compare the economic growth trajectories of Japan and a statistically constructed "synthetic" Japan, which had a similar profile until the late 1950s but did not experience the consolidation of the U.S.–Japan alliance, a process that began in 1958 and culminated with the signing of a formal defense pact in January 1960. We find that Japan's per capita Gross Domestic Product (GDP) from 1958 to 1968 was indeed boosted by an average of about 1,283 U.S. dollars per year. This amounts to as much as 39% of the 1958 baseline level. We substantiate these results with historical analysis on how the U.S. helped facilitate Japan's economic miracle.

Keywords: economic growth, U.S.-Japan relations, synthetic control, Japan

1 Introduction

The postwar rise of Japan is one of the most dramatic cases of rapid economic development in modern history. Only a decade after suffering total military defeat, Japan returned to its prewar standard of living. More remarkable, Japan's growth *accelerated* after this initial recovery period. From the late-1950s to the early-1970s, Japan's economy grew, on average, more than 10 percent annually. By 1970, Japan boasted the third largest economy and ranked among the most developed countries in the world.

Why did Japan grow so rapidly? Numerous economists, political scientists and historians have examined this question and stressed different factors, but the bulk of the literature tells some version of the following story (e.g. Amsden 2001; Calder 1988; Denison 1976; Dower 1979; Gao 2001; Johnson 1982; Kōsai 1986; Nakamura 1995; Nishimizu and Hulten 1978; Samuels 1987; World Bank 1993). In the 1950s and 1960s, a coalition of Japanese bureaucrats and businesspersons set Japan on a path of export-led growth, buoyed by massive domestic investment, foreign technology acquisition, protectionist barriers, and well-designed industrial policies. As a result of these far-sighted policies, economic growth accelerated dramatically and Japan ascended to the heights of the world economy.

On the other hand, some scholars argue that this conventional wisdom is correct but also incomplete (e.g., Forsberg 2000; LaFeber 1997; Miller 2012; Pempel 1999; Schaller 1997; Shimizu 2001). According to these scholars, Japan's economic policies and rapid growth required a unique and favorable international environment made possible by Japan's close alliance with the most powerful country in the world – the United States. Specifically, high investment rates required an abundance of capital, export-oriented growth required dedicated buyers, and technology-acquisition and

protectionist policies necessitated a tolerant international community. Japanese policymakers could not take any of these growth-ingredients for granted. Fortunately for them, American leaders were both willing and able to provide Japan with such advantages, because U.S. foreign policy during the early Cold War prioritized the creation and maintenance of strong anti-communist allies. Japan still might have developed without American patronage, but it is unlikely that it would have developed as quickly or thoroughly.

This story has been told by policy makers, political scientists, economists, historians, and journalists on both sides of the Pacific, but no study has yet tested it with modern statistical methods. To address this shortcoming, we compare the economic growth trajectories of Japan and a “synthetic” Japan, which we construct by applying a method proposed by Abadie and Gardeazabal (2003) and Abadie, Diamond and Hainmueller (2010, 2015). The counter-factual Japan, by design, had a similar profile until the late 1950s but did not experience the consolidation of the U.S.–Japan alliance, a process that began in 1958 and culminated with the signing of a formal defense pact in January 1960. We find that Japan’s per capita Gross Domestic Product (GDP) from 1958 to 1968 was indeed boosted by an average of about 1,283 U.S. dollars per year. This amounts to as much as 39% of the 1958 baseline level.

This new evidence has important implications for the field of political economy. In particular, it suggests that geopolitical context plays an essential but often overlooked role in shaping cross-national patterns of economic development. Japan’s postwar economic growth miracle is often cited as clear evidence of the virtues of the so-called “East Asian model,” an ambitious growth blueprint that entails considerable state-intervention in the economy. Yet, our results indicate that the success of Japan’s economic model, an allegedly effective and generally applicable model, re-

quired exceptional international circumstances, which no longer exist and are unlikely to return anytime soon. If this is the case, then developing countries today may need to eschew textbook models derived from Japan's Cold War experience in favor of more modest reforms tailored to their specific geopolitical circumstances.

This paper proceeds in three sections. First, we review the history of the U.S.–Japan relationship from the early 1950s to the late 1960s in order to provide historical context for our theory that the consolidation of the U.S.–Japan alliance fundamentally contributed to Japan's rapid growth. Second, we introduce our statistical methods and present the empirical results. Finally, we discuss the implications of our results for development policy.

2 Historical Overview

On January 19, 1960, the U.S. and Japan signed a revised alliance treaty that formally committed the U.S. to defend Japan from external aggression. This treaty, however, was the culmination of several years of negotiations and policy changes that began in the summer of 1957 and accelerated significantly in 1958. Although Japan was the focal point of U.S. security strategy in Asia throughout the 1950s, American leaders did not extend a security guarantee to Japan until the end of the decade, and the U.S.–Japan relationship was plagued with diplomatic, political, and economic conflicts prior to that point. In this section, we describe the dynamics that led the U.S. and Japan to consolidate their security relationship in the late 1950s and explain plausible mechanisms underlying a theory that this shift in U.S.–Japan relations impacted Japan's rapid economic growth.

2.1 The Initial U.S.–Japan Relationship

In 1951, as part of the peace settlement ending the U.S. occupation, the U.S. and Japan signed a security treaty that, from a Japanese perspective, “was only a modest step from occupation” (Destler et al. 1976, 13; also see Miller 2012, 88–92). The treaty gave the U.S. the right to station American troops in Japan, and to use those troops to quell domestic disturbances, but did not provide Japan with a formal U.S. security guarantee. The unequal nature of the treaty, plus several high-profile incidents in which Japanese citizens were killed by U.S. military personnel – e.g. the Lucky Dragon incident in which the fallout from a U.S. nuclear test killed a Japanese fisherman, and the Girard incident in which a U.S. soldier shot and killed a Japanese woman – aroused widespread Japanese contempt for the U.S. presence and the broader U.S.–Japan relationship.

This discontent was fueled by the fact that the Japanese economy was, in the early- to mid-1950s, “treading water, not moving forward” (Forsberg 2000, 83; also see Kim 1997, 156, Mochizuki 2001, 16, Schaller 1997, 57). U.S. procurement orders during the Korean War helped bring Japan’s GDP back to prewar levels (Welfield 1988, 90; also see Calder 1988, 43, Dower 1979, 315), but the “gift” of the wartime boom came with the “dagger” of inflation, shortages of raw materials (Dingman 1993), and a “distorted” economy that “cannot function without depending on special procurements” (Economic White Paper of Japan 1953, quoted in Uchino 1983, 75; also see Samuels 1994, 146–148). In the mid-1950s, the U.S. did little to help Japan diversify its economy; in fact, in 1956 and 1957 the U.S. pressured Japan to implement a set of voluntary export restraints, which the U.S. Ambassador to Japan described as “about as voluntary as your doing something if youve got a pistol pointed at your head” (quoted in Forsberg 2000, 212).

By the mid 1950s, American officials were becoming increasingly aware that U.S. policy was failing to produce a strong alliance. The U.S. National Security Council (NSC) issued reports documenting Japan’s “creeping neutralism” and “tendency to drift away” from alignment with the U.S. (LaFeber 1997, 314; Schaller 1997, 114). After a series of conflicts over Japanese rearmament, the U.S. ambassador to Japan reported to the Secretary of State that “Japan does not consider itself an ally or partner with the United States but rather a nation which for the time being is being forced by circumstances to cooperate with the United States and which intends... to wring out of this relationship every possible advantage at minimum cost (U.S. Department of State 1952–1954, 1714–15). Indeed, in 1956, Japanese Prime Minister Hatoyama Ichirō¹ normalized Japanese diplomatic relations with the Soviet Union and sought to build new economic connections between Japan and Communist China (Forsberg 2000; LaFeber 1997; Schaller 1997; Swenson-Wright 2005).

By the start of 1957, the U.S.–Japan relationship was fraught with tension, and U.S. leaders worried that they were losing their main foothold in Asia. As the NSC noted in 1957, the “major U.S. objective – a firm alliance in the Pacific – is not being achieved” (Schaller 1997, 130). In January 1957, Ishibashi Tanzan became Prime Minister and declared his intention to normalize Japan’s relations with Communist China, another blow to American hopes for an active and strong U.S.–Japan relationship. The next month, however, Ishibashi became seriously ill and was replaced as Prime Minister by Kishi Nobusuke,² a staunch anticommunist and advocate of close relations with the U.S. The sudden change in leadership opened up the possibility for a new U.S.–Japan relationship, and both sides seized the opportunity.

¹For historical figures, all Japanese names are written in the Japanese style, with family name preceding given name.

²Kishi Nobusuke is a grandfather of the current prime minister of Japan, Abe Shinzo.

2.2 The Revised U.S.–Japan Relationship

It is, perhaps, ironic that Kishi, a former member of Japan’s cabinet during World War II and an accused Class A war criminal, ended up cementing Japan’s alliance with the U.S. Yet Kishi’s economic views, his desire to crack down on leftist activism, his disdain for the Soviets, and his willingness to curtail Japan’s economic links with China endeared him to senior U.S. officials (LaFeber 1997, 135; Schaller 1997, 315). Secretary of State John Foster Dulles described Kishi as the strongest government leader to emerge in postwar Japan (U.S. Department of State 1955–1957, 346–7), and Douglas MacArthur II, the U.S. ambassador to Japan, said Kishi was “by far the best leader in sight in terms of U.S. objectives” (U.S. Department of State 1955–1957, 271). Reiterating that Kishi presented new and important opportunities, MacArthur II argued, “[W]e have at last an able leader of Japan. [Kishi] indicates he wants to make a bold new start with us. ... I think we can do business with him” (quoted in Miller 2012, 224).

Kishi’s visit to the U.S. in June 1957 to meet with Eisenhower and his administration in Washington was therefore an important turning point in the U.S.–Japan relationship. During this visit, American officials made several crucial concessions, withdrawing a large number of U.S. troops to assuage the outcry prompted by the Girard incident, and more importantly, opening the possibility of renegotiating the U.S.–Japan security treaty, which the Japanese had first requested in 1955. This shift showed U.S. officials’ desire to strengthen the U.S.–Japanese relationship and to secure Kishi’s political standing in Japan (U.S. Department of State 1955–1957, 485–535; also see U.S. Department of State 1958–1960, 23). In a joint statement, Kishi and Eisenhower declared they were “convinced that relations between Japan and the United States are entering a new era firmly based on common interests and

trust.” Other U.S. officials echoed this sentiment, characterizing Kishi’s visit as a “bold new start” that would usher in a “new era” in the bilateral relationship (U.S. Department of State 1955–1957, 328–375).

Throughout the negotiations for the revised treaty, which took place between 1958 and 1960, U.S. negotiators were very responsive to Japanese demands, demonstrating their desire to renew Japan’s commitment to this relationship (Miller 2012, 226–237). The final treaty, signed in January 1960, removed central points of controversy by including a formal security guarantee for Japan and eliminating the right of U.S. troops in Japan to interfere in domestic disturbances.

2.3 U.S. Policy Interventions in the late 1950s

Importantly, the plan for a revised security treaty “was anticipated by the business world as heralding a new era of cooperation, expanded trade, and increased foreign investment” (Roberts 1979, 461). Indeed, American leaders at the time were driven by “the conviction that economic growth by strategic allies would defuse the potential appeal of anticapitalist ideologies” (Pempel 1999, 174) and decided to “promote Japan as a bulwark, if not a base camp, against communist encroachments” in Asia (Encarnation and Mason 1990, 37; also see Miller 2012, 204). Moreover, American policymakers’ desire to secure Kishi’s political legitimacy – especially against charges that he would revive wartime militarism – in order to facilitate a new security treaty motivated the U.S. to “refrain” from pressuring Japan on economic issues (Forsberg 2000, 204). The security treaty negotiations were, therefore, accompanied by various economic initiatives designed to facilitate Japanese growth while securing the U.S. Japanese–alliance.

First, the U.S. orchestrated low–interest loans (Calder 1988, 89; Welfield 1988, 90).

By the mid 1950s, Japan had faced a serious scarcity of capital necessary for active domestic investments. As a result of U.S. efforts, however, foreign loans to Japan doubled in 1958, most of which came from the World Bank, “which the United States dominated,” as well as the U.S. Export-Import bank and American banks, which started “to play a major role as capital supplier[s] in the development of Japanese utilities and heavy industry” (Calder 1988, 89–90).

Second, the Eisenhower administration approved a reduction in Japanese defense spending, specifically Japan’s financial support of U.S. forces (U.S. Department of State 1958–1960, 1–3). More broadly, American policymakers refrained from pressuring Japan to further develop its military, a major shift from the first half of the 1950s. As a result, Japanese defense spending as a share of GDP declined by 20 percent between 1958 and 1960, the sharpest shift of the entire postwar era, and continued to decline thereafter, falling below 1 percent of GDP by 1970 (Calder 1988, 415, 431–432). This U.S. security guarantee allowed Japan to “tur[n] inward and ma[k]e economic growth and the pursuit of affluence its highest priorities” (Sasaki 1991, 2).

Third, the U.S. helped create the necessary conditions for Japan’s rapid export growth. Japan became a member of General Agreement on Tariffs and Trade (GATT) in September 1955, but fourteen of the thirty-two members refused to grant most-favored-nation status to Japan, and the remaining eighteen members “established stand-by measures... to protect their industries in the event Japanese imports [threatened] their domestic industry” (Shimizu 2001, 156). As a result, the GATT agreement was “slight in substance,” and Japan’s balance-of-payment deficit spiraled to dangerous levels in the mid-1950s (Forsberg 2000, 5, 150–168). U.S. leaders like Ambassador Douglas MacArthur II worried that Japan would be “forced into some form of economic accommodation with [the] Communist Bloc” if the U.S. did not provide an

outlet for Japanese exports (U.S. Department of State 1958–1960, 4). To prevent this outcome, the Eisenhower administration (and subsequently, the Kennedy, and Johnson administrations, as well) resisted protectionist demands from U.S. interest groups and worked to open the U.S. market to Japanese goods.

Specifically, in 1958, U.S. and Japanese business leaders established the Joint Committee on U.S.–Japan Trade, and Japan sent its first government-funded trade mission to the U.S. Eisenhower also used the flexibility given by the U.S. Trade Act of 1958, which authorized the president to lower tariffs by 20 percent and gave him four years of enhanced authority to negotiate trade deals, to expand U.S.–Japanese trade (Forsberg 2000, 218–219). Indeed, while certain U.S. industries called for protection from Japanese goods, “the Eisenhower administration successfully deflected most of the pressure for restrictions on Japanese imports” (Forsberg 2000, 225). For example, during a closely watched discussion over the import of Japanese-made stainless-steel flatware in 1958, the Eisenhower administration resisted business pressure for increased tariffs by instead proposing that Japan accept a slightly lower Voluntary Export Restraint (VER) (Forsberg 2000, 218–225; Shimizu 2001, 167–170). Between 1958 and 1960, American purchases from Japan increased by more than 150%, giving Japan its first-ever trade surplus (Forsberg 2000, 218; Shimizu 2001, 3). This trend continued: During Japan’s high-growth years, the U.S. absorbed more than 30% of Japan’s exports, a situation comparable to Bulgaria’s export dependence on the Soviet Union (Hunsberger 1972, 134; Pempel 1999, 177)

Finally, fearing the growing popularity of the Japanese Socialist Party (JSP), the U.S. also began to intervene financially in Japanese politics. Evidence in a variety of open and (according to scholars who have seen them) still-classified U.S. government documents shows that the Eisenhower administration, through the Central Intelligence Agency, began providing millions of dollars in secret campaign funds to Kishi

and other LDP politicians in early 1958 as part of their larger goal of rebuilding the U.S.–Japan alliance (Johnson 1995; LaFeber 1997, 312–337; Samuels 2001; Schaller 1997, 130–135; Schaller 2001, 46). American officials – including Alfred C. Ulmer, Jr., the CIA’s operations chief for East Asia from 1955 to 1958; Roger Hilsman, the head of Intelligence and Research at the State Department in the Kennedy and Johnson administrations; Norbert A. Schlei, a legal adviser in the Kennedy and Johnson administrations; and U. Alexis Johnson, American ambassador to Japan from 1966 to 1969 – have publicly acknowledged making or authorizing millions of dollars in payments to LDP politicians. U.S. officials believed that U.S. security and the efficacy of the U.S.–Japanese alliance rested on “a conservative political hegemony within Japan” (Schaller 1985, 122; also see Johnson 1995).

2.4 The Growth Acceleration and Slowdown in the 1960s

It should be noted that the alliance consolidation process was far from smooth. Kishi’s determination to ram the ratification of the revised security treaty through the Diet, especially on the heels of his push for a highly controversial police bill in 1958, gave Japanese citizens the impression that Kishi was reviving the prewar authoritarian state (Calder 1988, 88). When the Socialist party tried to stop voting in the Diet on the revised security treaty, Kishi ordered five hundred policemen to remove them; the Diet then passed the treaty in the absence of the opposition. In response to both the treaty and Kishi’s actions, socialists, labor unions, anti-base groups, and student groups helped organize massive protests and strikes that brought millions of Japanese to the streets in June 1960 (Kapur 2011, 13). In the face of such a large public outcry, Kishi resigned after the new security treaty passed through the Diet, and Eisenhower canceled his planned trip to Japan to celebrate the signing of the new treaty (Packard

1966).

Despite this turmoil in 1960, however, the strategic bargain between the U.S. and Japan persisted and economic ties continued to flourish. By focusing on economic growth, Japan's new Prime Minister, Ikeda Hayato, sought to overcome the contentious politics of the 1950s. In particular, in November 1960, Ikeda announced his ten-year Income Doubling Plan, which grew out of an earlier 1957 plan that combined domestic and international factors; it estimated rapid economic growth based on domestic savings and investment, external receipts and payments, and labor supply (Metzler 2013, 199). Economic interactions also remained central to the U.S.–Japan alliance; in 1961 the Kennedy administration passed several trade expansion initiatives that lowered tariffs on a broad range of Japanese products and allowed Japan to raise textile exports to the U.S. by 5%, all part of Kennedy's public pledge to assist Ikeda's Income Doubling Plan (Schaller 1997, 177-183). As Forsberg concludes, “the U.S. desire to consolidate the Cold War alliance provided Japan the opportunity to crack the lucrative American market, and Japanese industry seized the moment” (Forsberg 2000, 230).

In sum, Japan profited tremendously from the consolidation of the U.S.–Japan alliance. By the end of the 1960s, however, American leaders, facing a costly war in Vietnam, an expanding trade deficit, and tepid economic growth, had become less tolerant of Japan's privileged position in U.S. economic and security policy. In 1969, President Nixon pulled tens of thousands of U.S. soldiers out of Asia and declared that U.S. allies would have to “assume the primary responsibility of providing the manpower for [their] defense.”³ In 1971, the Nixon administration abandoned the dollar's peg to gold and imposed a 10% surcharge on imports. Nixon later described

³Nixon, Address to the Nation on the War in Vietnam, November 3, 1969.

these policies as an effort to “stick it to the Japanese” (Quoted in Hoff 1994, 140). Indeed, they marked “the beginning of the end of the special dependency relationship that had prevailed between the United States and Japan” (Schaller 1997, 245). Japan was forced to revalue its currency, and Japanese leaders “could no longer count on transferring many of the economic consequences of their domestic policies onto the United States, nor could they even anticipate world economic conditions that would allow them to continue their prior policies of high growth” (Pempel 1987, 282).

Not coincidentally, Japan’s annual economic growth rate plunged from 10% (the 1960s average) to 3% in 1971, where it remained until the 1980s when it declined still further. To be sure, other factors are key to explaining why Japanese growth decelerated in the 1970s, among them the surge in oil prices after the 1973 OPEC crisis. The correlation between the downturn in U.S.–Japan relations and the end of rapid Japanese growth, however, is consistent with the argument that the formation and strengthening of the U.S.–Japan alliance in the early decades of the Cold War played a crucial role in facilitating Japan’s exceptional economic performance.

3 Empirical Tests

If the consolidation of the U.S.–Japan alliance was a key factor behind Japan’s economic miracle, then this consolidation should correspond *temporally* with the start of Japan’s growth acceleration. In this section, we test this observable implication with a non-parametric approach known as the “synthetic control method” (Abadie and Gardeazabal 2003; Abadie, Diamond and Hainmueller 2010, 2015).

Two important remarks are in order. First, although the U.S. and Japan formally signed the *Treaty of Mutual Cooperation and Security* on January 19, 1960, the historical documents presented in the previous section show that the groundwork for

this strengthened U.S.–Japan relationship was laid in 1958. For this reason, in our analysis, we will use 1958 as the year of “intervention” (or “treatment”) rather than 1960.⁴

Second, strictly speaking, our statistical analysis only allows us to examine whether *some event in 1958* set Japan on a higher growth trajectory. As we discussed in the previous section, however, the efforts to consolidate the U.S.–Japan security relationship fundamentally altered Japan’s economic prospects. We, therefore, regard it as the most likely driver of Japan’s growth acceleration after the late 1950s. At this end of this section, we will discuss some other alternative interpretations.

3.1 The Synthetic Control Method

It is a challenging task to assess how the Japanese economy would have developed without the U.S.–Japan alliance because there is no country sufficiently similar to Japan to provide a valid point of comparison. More generally, it is often difficult to estimate the causal *effect* of a critical event (e.g., a policy change, a terrorist attack, etc.) that happened in a particular context (e.g., a country). When a particular event and its consequences is the subject of inquiry, scholars and journalists typically discuss causal *mechanisms* (or, simply, logically consistent stories) based on available quantitative and qualitative materials. Such process-tracing research is necessary to provide important insight, as we did and reported our main findings in Section 2. Yet, it is not sufficient to answer the following counter-factual question necessary for causal identification: *What would have happened in the absence of the critical event?*

To address this problem, we use a non-parametric statistical method developed

⁴Following the literature of research designs for causal inference, we use either of two words – intervention and treatment – to mean a critical event that is expected to have influenced the outcome variable. These words are used interchangeably, in this paper.

by Abadie and Gardeazabal (2003) and Abadie, Diamond and Hainmueller (2010, 2015). Their “synthetic control” method uses data from multiple comparison units to construct a single, synthetic comparison unit, which resembles the unit of interest before it experienced a critical event. In our case, if a “synthetic Japan” is successfully generated based on a set of similar countries and valid predictors, which we will explain shortly, and if the consolidation of the U.S.–Japan alliance in the late 1950s did, indeed, have substantial economic ramifications, the trajectories of economic growth should be similar between Japan and the synthetic Japan before the year of intervention, 1958, but then should diverge after that.

This method has been recently applied to study the consequences of various critical events, and one of the most common applications is aimed to understand the impacts of particular interventions on per capita GDP. Specifically, previous studies have examined the effect of the outbreak of terrorism in the late 1960s on per capita GDP in the Basque Country in northern Spain (Abadie and Gardeazabal 2003), the effects of economic liberalization on per capita GDP in a worldwide sample of countries (Billmeier and Nannicini 2012), the effect of the German reunification in 1990 on West Germany’s per capita GDP (Abadie, Diamond and Hainmueller 2015), and the effect of the outbreak of the 2000 Palestinian Intifada on Israel’s per capita GDP (Horiuchi and Mayerson 2015). Our study makes a contribution to this growing literature by focusing on the consolidation of the US–Japan alliance in the late 1950s and Japan’s economic miracle.

3.2 Data and Variables

As in the previous studies cited above, in this paper, we use per capita GDP as our outcome variable. The data source is the Maddison Project (Bolt and van Zanden

2014), which is the only dataset that provides the estimated GDP and population for many countries, including Japan, for a sufficiently long period.

The period of investigation for this analysis is from 1920 to 1969. As we noted earlier, we use 1958 as the year on intervention/treatment. Our post-treatment period (including 1958) spans eleven years, from 1958 to 1968. We do not extend the post-treatment period beyond these years (say, from 1958 to 1978), because as we discussed earlier, the U.S.–Japan relationship started to deteriorate in the late 1960s in part due to the post-treatment outcome itself – Japan’s growth acceleration after the late 1950s.⁵ In contrast, we use a fairly long pre-treatment period (from 1920 to 1958), by following Abadie, Diamond and Hainmueller’s (2010, 495) suggestion to incorporate a longer period (and hence, more data) to improve the accuracy of estimation.

We use fifteen countries for a “donor pool,” which is a set of comparison units. They include Austria, Belgium, Bulgaria, Costa Rica, France, Germany, Greece, Guatemala, Hungary, Indonesia, Italy, Netherlands, the Philippines, Taiwan, and USSR. The Maddison Project includes data for many other countries, but we focus on countries that recorded considerably negative economic growth during the Second World War and endeavored to achieve post-war economic recovery – just as Japan did.⁶ Selecting units that are sufficiently similar to the unit of interest (in our case, Japan) is necessary to make a valid synthetic control and to make a valid interpretation (Abadie, Diamond and Hainmueller 2010, 2015).

⁵Methodologically, overly extending the post-treatment period would introduce a problem of “post-treatment bias” (Rosenbaum 1984). To estimate the impact of an intervention, we need to avoid including a period in which the post-treatment outcome itself brings about substantially different political and economic consequences.

⁶Specifically, we keep countries if the average per capita GDP during 1938–1940 divided by the average GDP per capita during 1944–1946 is smaller than 0.90. We tried some other specifications, but the results are substantially similar.

Formally, we have a sample of $J + 1 (= 16)$ countries, where $j = 1$ is the “treated unit” (i.e., Japan) and units $j = 2$ to $j = J + 1$ are comparison units in the donor pool. We construct a synthetic Japan using a weighted average of the countries in the donor pool, represented by a $(J \times 1)$ vector of weights $W = (w_2, \dots, w_{j+1})'$ with $0 \leq w_j \leq 1$ for $j = \{2, \dots, J + 1\}$ and $w_2 + \dots + w_{j+1} = 1$. This vector is estimated by the constrained optimization with a set of “predictors” that are not influenced by the treatment but are expected to affect the post-treatment trajectory of Japan’s per capita GDP.⁷

With regard to the selection of predictors, however, we need to acknowledge a limitation in our study; namely, unlike the previous studies applying the synthetic control method to study economic growth, we are unable to use a standard set of predictors of economic growth, such as measures of investment, consumption, education (human capital), trade openness, inflation, etc. This is simply because we do not have reliable, cross-national data for these variables, covering many decades before and after the Second World War. As an alternative, we use the following variables that are highly relevant in describing Japan’s political economic profile from 1920 to 1958, as well as in predicting the post-1958 growth.

First, we use a dummy variable indicating whether or not a country was a member of the United Nations as of its foundation in 1945. Japan and other defeated nations were not founding members, and thus had to start their post-war political and economic histories with international environments that are different from those shared by victorious nations.

Second, we use measures of post-war economic recovery and post-war population growth. The former is calculated by taking a ratio of per capita GDP in a year be-

⁷For complete technical details, see Abadie and Gardeazabal (2003) and Abadie, Diamond and Hainmueller (2010, 2015).

fore the intervention and per capita GDP in 1945, and the latter is also calculated in a similar manner. These two variables are essential in describing each country’s post-war development until the late 1950s. There are obviously a range of economic, political and demographic variables *determining* such post-war economic and population growth. The “independent” variables not included in our model and their effects on the post-treatment growth trajectory are, to a large extent, captured by the observed “dependent” variables themselves (i.e., post-war growth in economy and population).

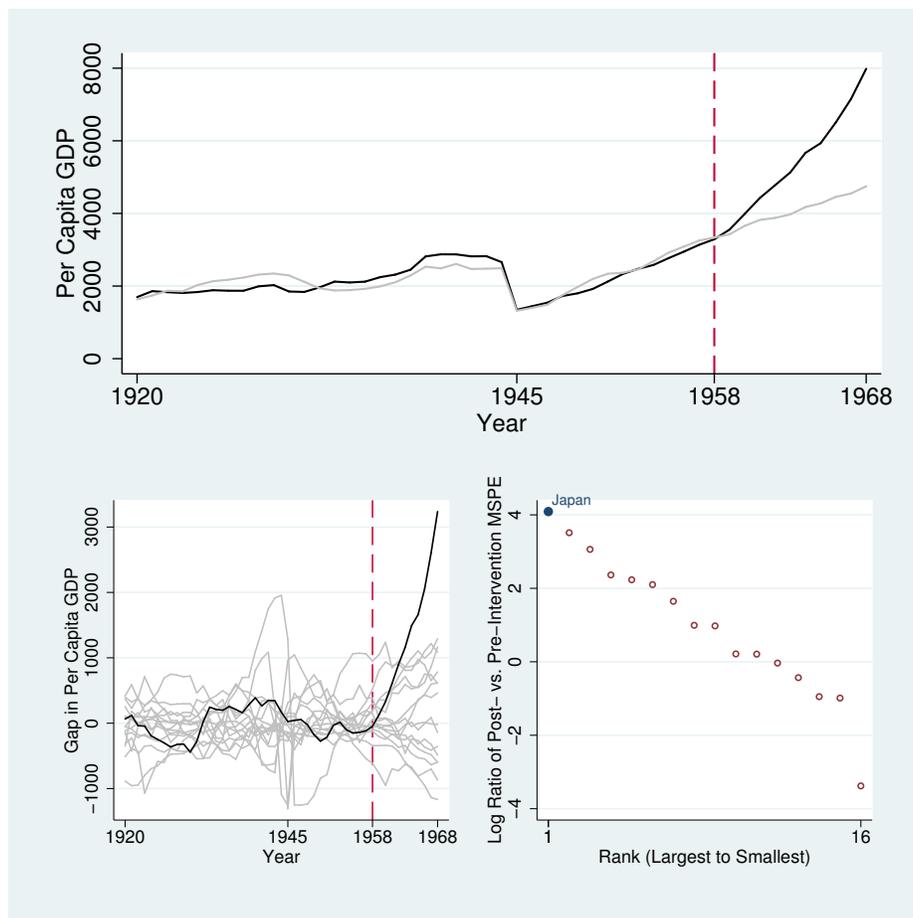
Finally, following the previous studies, we include a few lagged outcome variables. The average per capita GDP during the entire pre-intervention period (i.e., from 1920 to 1957) is necessary to give higher weights to countries that are similar to Japan, on average, with regard to the level of economic development. Per capita GDP in 1944, a year in which Japan’s catastrophic economic disasters started, and per capita GDP in 1958, a year of the intervention, are used to improve the construction of a synthetic control.⁸

3.3 Main Results

As long as the model specifications (i.e., the selections of a donor pool, predictors, and the length of a pre-treatment period) are valid, we should obtain a synthetic control that provides a good fit for the treated unit during the pre-treatment period. The top panel in Figure 1 shows that this is indeed the case. It compares the trajectories

⁸One may suggest the use of numerous lagged outcome variables for the entire pre-treatment period (i.e., one lagged variable for each year). This approach, however, would induce a serious over-fitting problem. Namely, the performance of prediction (in terms of the magnitude of prediction error) during the pre-treatment period would dramatically improve, while the performance of prediction during the post-treatment period would get worse substantially.

Figure 1: The Effect of Intervention in 1958 in Japan on Per Capita GDP



Note: **[Top]** After 1958, the rate of increase in Japan’s per capita GDP (black line) accelerated, as compared to the counterfactual scenario (gray line). The counterfactual trajectory is based on the synthetic control method. **[Bottom-Left]** The dark line shows the difference in per capita GDP between Japan and the synthetic Japan. The grey lines show the results of a “in-space” placebo test in which the intervention (or “treatment”) was assigned to each of the other countries in the donor pool. **[Bottom-Right]** Each dot shows the log ratio of pre-1958 (inclusive) mean squared prediction error (MSPE) and post-1958 (exclusive) mean squared prediction error. If we were to select a country at random, the probability that its post-versus-pre-intervention MSPE ratio would be the largest for Japan out of the 16 countries is $1/16 = 0.0625$, which is smaller than 10%.

Table 1: Weights for Synthetic Japan

Unit	Weight	Unit	Weight	Unit	Weight
Austria	0.470	Germany	0	Italy	0
Belgium	0	Greece	0	Netherlands	0
Bulgaria	0	Guatemala	0	Philippines	0.040
Costa Rica	0	Hungary	0	Taiwan	0.109
France	0	Indonesia	0.381	USSR	0

Note: The weights are assigned using the synthetic control method.

of per capita GDP between Japan (black line) and the synthetic Japan (gray line). The two lines are almost exactly the same until 1958, but they begin to diverge after 1958 and continue to diverge at an even faster rate until the end of the period of our investigation.

To be more precise, in 1968, Japan’s actual per capita GDP (7,983 U.S. dollars) was 3,237 dollars higher than the synthetic Japan’s (4,747 U.S. dollars). Without the intervention in 1958, Japan’s per capita GDP could have been smaller by an average of about 1,283 U.S. dollars per year. This is equivalent to 39% of the 1958 baseline level. Compared to the negative effects of the German reunification (8.0% of the 1990 baseline level) on West Germany’s per capita GDP (Abadie, Diamond and Hainmueller 2015) and of the Second Intifada (8.6% of the 2000 baseline level) on Israel’s per capita GDP (Horiuchi and Mayerson 2015), the positive effect of the consolidation of the U.S.-Japan alliance on Japan’s per capita GDP is found to be substantially larger.

Table 1 shows a list of countries in the donor pool and the weight assigned to each country by the synthetic control method. The synthetic Japan in our analysis is comprised of 47.0% of Austria, 38.1% of Indonesia, 10.9% of Taiwan, and 4.0% of the Philippines. Table 2 shows the values of predictors for Japan during the

Table 2: The Means of Predictors During the Pre-Intervention Period

	(Actual) Japan	Synthetic Japan
Member of U.N. in 1945	0	0.04
Post-war Economic Recovery	2.330	2.150
Post-war Population Growth	1.201	1.160
Per capita GDP (1920–1957 average)	2,176.0	2,185.8
Per capita GDP (1944)	2,659.0	2,491.1
Per capita GDP (1958)	3,288.9	3,335.3

Note: *Post-war Economic Recover* is per capita GDP in 1957 divided by per capita GDP in 1945. *Post-war Population Growth* is population in 1957 divided by Population in 1945.

pre-intervention period, as well as the weighted average values of predictors for the synthetic Japan. These values are very similar. Japan and the synthetic Japan (except for the Philippines, which is 4.0% of the synthetic Japan) are not the founding U.N. members. Per capita GDP more than doubled from 1945 to 1957 in both Japan (2.33 times) and the synthetic Japan (2.15 times). During the same period, the population increased by 20.1% in Japan and 16.0% in the synthetic Japan. The average per capita GDP from 1920 to 1957, as well as the amounts of per capita GDP in 1944 and 1958, are all fairly similar between actual Japan and the synthetic Japan.

These results suggest that we succeeded in constructing a synthetic control, which is similar to the unit of interest (i.e., Japan). Importantly, however, the almost identical pair experienced dramatically different histories after 1958. Japan experienced the miraculous growth, while the synthetic Japan experienced a respectable rate of growth to be sure, but far from miraculous.

3.4 Placebo Tests

To assess the significance of the estimated treatment effect, we conducted two types of placebo tests suggested by Abadie, Diamond and Hainmueller (2010, 2015). The first type is what they call an “in-space” placebo study. Specifically, we applied the synthetic control method to estimate the effect of an intervention in 1958 to every other country in the donor pool listed in Table 1. That is, for each country, we created a synthetic control using the same set of predictors and examined whether the trajectories of per capita GDP diverged between the factual and counterfactual cases from 1958.

The results are shown in the bottom panels in Figure 1. The vertical axis on the bottom-left panel measures the difference in per capita GDP between the factual case and the counterfactual (synthetic control) case. The grey lines denote the gaps for all countries except Japan, while the black line denotes the gap for Japan. For a couple of countries, our model fails to make a reasonable synthetic control. These cases are indicated by a large deviation from the horizontal line at 0 (i.e., no gap between the factual and counterfactual) in both pre-intervention and post-intervention periods. Putting aside these unique cases, the graph shows that the (positive) gap during the post-treatment period tends to be particularly large for Japan, as compared to other countries.

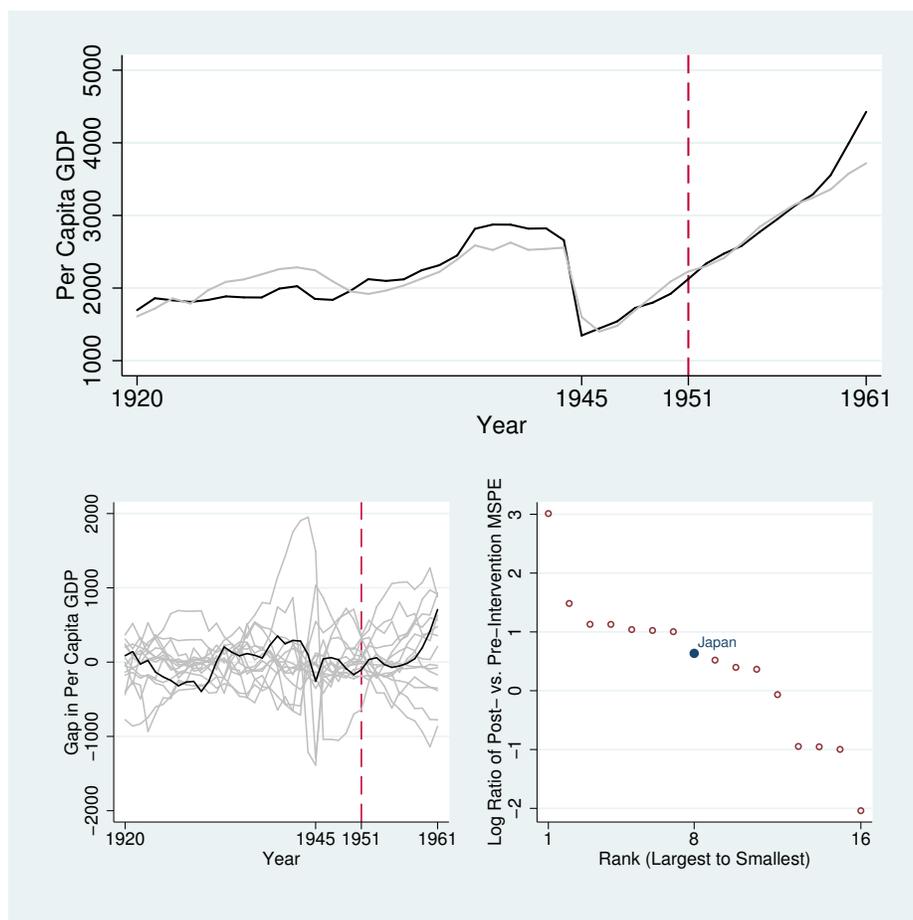
The large post-intervention gap for Japan, however, may not necessarily indicate that the effect of an intervention in 1958 is large, since the pre-intervention gap may also be large. To assess the relative magnitude of the gap for Japan, as compared to that of other countries in the donor pool, we calculated the logged ratios of post/pre-intervention mean squared prediction error (MSPE). The results are presented in the bottom-right panel of Figure 1. Japan’s score is the largest among all 16 countries.

If we were to select a country at random, the probability that its post-versus-pre-intervention MSPE ratio would be the largest out of the 16 countries is $1/16 = 0.0625$, which is smaller than 10%.

Figure 2 shows the results of another placebo test called an “in-sample” placebo study. In this analysis, the treatment is counterfactually assumed to have happened in 1951, which marks the first full year of the Korean War. Some studies argue that the Korean War kick-started Japan’s growth via military procurement orders (see, for example, Gao 1997). For this test, we use the same technique and the same predictors to construct a synthetic control. The length of post-treatment period is also the same (ten years), and the pre-treatment period is from 1920 to the year of treatment. Figure 2 show that per capita GDP trajectories of Japan and its synthetic counterpart do not diverge considerably after 1951. Japan’s post-versus-pre-intervention MSPE ratio is ranked 8th. If we were to select a country at random, the probability that this ratio would be ranked 8th is 50%. These results imply that the beginning of the Korean War was not the turning point for Japan’s growth acceleration.

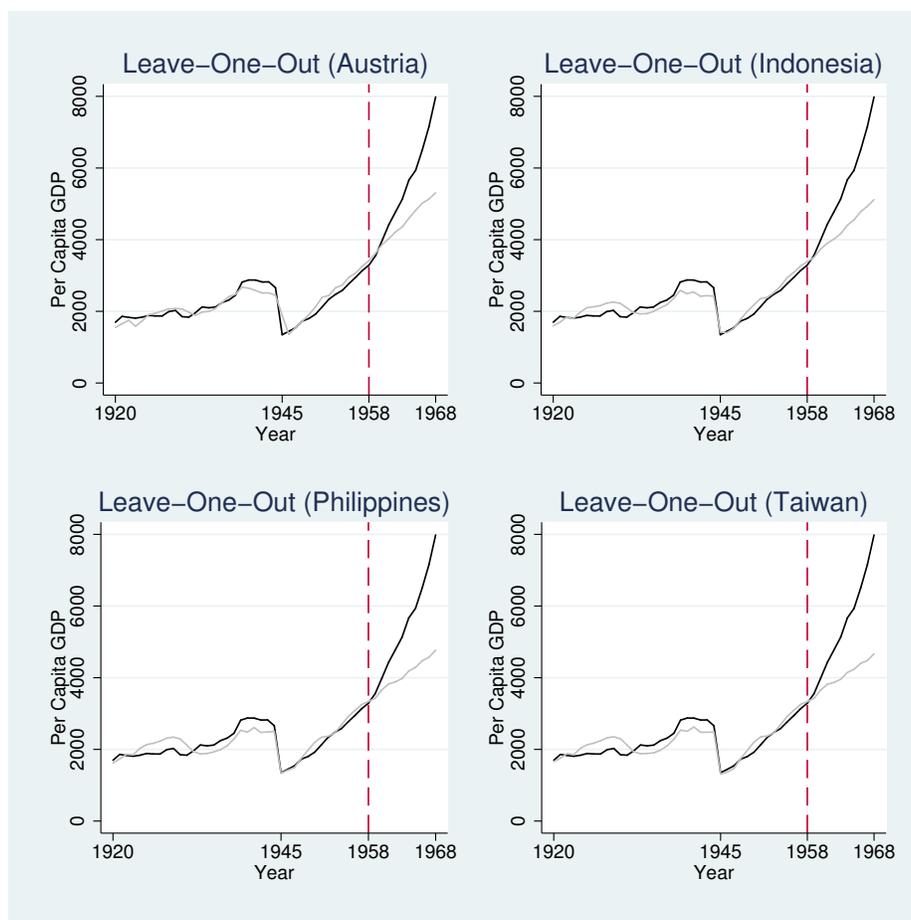
The final check of our analysis is a robustness test suggested by Abadie, Diamond and Hainmueller (2015). In this test, we iteratively dropped one of the four units that constitute the synthetic control (i.e., Austria, Indonesia, the Philippines, and Taiwan) and re-estimated the effect using the same period and the same set of predictors. The objective of this “leave-one-out” sensitivity test is to make sure that a particular country does not drive the results of our analysis. The results are presented in Figure 3. This shows that the results of our main model (the top panel in Figure 1) are fairly robust. Even after excluding one of the countries given a positive weight, the results are similar: The trajectories of per capita GDP are similar between Japan and the synthetic Japan until 1958, but they started to diverge after the consolidation of the U.S.–Japan relationship.

Figure 2: The Effect of Intervention in 1951 in Japan on Per Capita GDP



Note: **[Top]** After 1951, the rate of increase in Japan’s per capita GDP (black line) accelerated, as compared to the counterfactual scenario (gray line). The counterfactual trajectory is based on the synthetic control method. **[Bottom-Left]** The dark line shows the difference in per capita GDP between Japan and the synthetic Japan. The grey lines show the results of a “in-space” placebo test in which the treatment was assigned to each of the other countries in the donor pool. **[Bottom-Right]** Each dot shows the log ratio of pre-1951 (inclusive) mean squared prediction error (MSPE) and post-1951 (exclusive) mean squared prediction error. If we were to select a country at random, the probability that its post-versus-pre-intervention MSPE ratio would be the largest for Japan out of the 16 countries is $8/16 = 0.50$, which is larger than 10%.

Figure 3: The Results of Leave-One-Out Sensitivity Tests



Note: The dark and gray lines show the growth trajectories of Japan and the synthetic Japan, respectively. Even after excluding one of the countries given a positive weight, the results are similar: The trajectories of per capita GDP are similar between Japan and the synthetic Japan until 1958, but they started to diverge after the consolidation of the U.S.–Japan relationship.

3.5 Alternative Interpretations

The result of our statistical analysis suggest that Japan entered a faster growth trajectory after 1958. It is consistent with the historical narratives sketched out in Section 2. Kishi's June 1957 visit to the U.S. set in motion plans for a new and more robust U.S.–Japan relationship, which developed during 1958 and 1959, culminated in the signing of the revised security treaty in January 1960, and persisted throughout the 1960s.

It is important to note, however, that our statistical results should be read only for what they are – a systematic way to determine *when* an unexplained acceleration in Japan's growth occurred, not a definitive account of *why* Japan's growth accelerated. Our results could be driven by other events that occurred in 1958.

One such event could be the 1958 Japanese elections in which the LDP secured more than 60% of the seats in the Lower House election. The LDP would go on to retain power until 1993. Thus, one may argue that the consolidation of conservative power in Japan was the turning point for Japan's postwar economic growth. Although we cannot rule out such an interpretation, we are skeptical that it fully explains our results. The 1958 election was not a landslide victory and did not allow investors to predict that the LDP would dominate Japanese politics for 35 years. Although the LDP won 287 out of 467 seats in 1958, it was ten fewer seats than the Liberals and Democrats jointly won in 1955 (the Liberals and Democrats then merged to form the LDP that same year). Moreover, the Japanese Socialist Party won 166 seats in 1958, an amount greater than the number of seats the Socialists won in 1955. Finally, as we explained earlier, there is reason to believe that the LDP's electoral success in 1958 and subsequent political dominance were at least partially endogenous to the party's close relationship with the U.S., which funneled funds to LDP politicians and helped

the LDP stimulate the Japanese economy once it was in power.

The second alternative explanation for our statistical results is the Japanese business cycle. In 1958, Japan recovered from a yearlong inventory recession and experienced an economic boom (the “Iwato” boom), which was generated by extremely bullish investment and a rapid influx of foreign capital. Such an interpretation focusing on the business cycle may explain the initial few years of economic growth after 1958, but it seems an unlikely explanation for the next decade of double-digit growth rates. Moreover, as we explained earlier, the surge in Japanese investment rates beginning in 1958 may be partially endogenous to Japan’s relationship with the U.S., which orchestrated an influx of foreign investment to Japan and helped Japan free up capital for investment by significantly reducing Japan’s defense burden.

A third alternative explanation highlights labor arrangements within Japan. The 1950s was marked by extensive and economically disruptive labor activism in major industries, particularly between 1957 and 1961 (Gordon 1998, 104). By the late 1950s, however, changing union values, a growing corporate ethos, and more generous pay schedules began to foster a new pattern of “cooperative unionism” that increasingly eschewed strikes as a major tactic (Gordon 1998, 129–132). This shift, however, was just beginning in 1958. Indeed, 1960 witnessed a yearlong strike at the large Mitsui Miike Coal Mine. Moreover, this corporate ethos was fostered in part by American policymakers, who promoted cooperation between Japanese business and labor as part of their emphasis on Japanese economic growth.

In sum, we acknowledge that there may be other factors that explain Japan’s dramatic growth takeoff after 1958. We believe, however, that these factors cannot alone explain Japan’s sustained growth throughout the 1960s and may be partially endogenous to Japan’s special relationship with the U.S.

4 Conclusion

Most analyses attribute Japan's postwar prosperity to Japanese policies. Our study, by contrast, suggests that such factors were necessary but insufficient: Japan rose in part because of its institutions and policies, but the effectiveness of those institutions and policies was, in turn, enhanced by Japan's privileged geopolitical environment. Specifically, Japan had the good fortune to rebuild its economy during the Cold War when the most powerful country in the world needed strong allies. The U.S. not only absorbed Japan's exports and tolerated Japanese protectionism but also subsidized the Japanese economy and transferred technology to Japanese firms. Without such advantages, Japan might still have achieved solid economic growth, but probably not an economic miracle.

What does this historical finding mean for contemporary development policy? The harsh reality is that poor countries today confront a far less nurturing international environment than Japan enjoyed in the 1950s and 1960s. With the Cold War over, the U.S. is less willing to tolerate protectionism or curtail its own prosperity for the sake of other countries. Moreover, many of the tools that Japan used to stimulate growth and cultivate globally competitive firms – e.g., export subsidies, import tariffs, foreign investment restrictions – are now regulated or banned by the World Trade Organization (WTO). As the U.S. and other rich countries dig themselves out of the recent economic crisis, they are especially unlikely to tolerate policies that give firms in poorer countries an advantage over their own.

In such a hostile economic environment, poor countries' best option may be to smuggle industrial policies and protectionism through the back door under the guise of innovation, monetary, and human development policies. For example, subsidies can be funneled through R&D budgets, exports can be promoted through currency

undervaluation and special economic zones, and industries can be protected by health and environmental standards. Alternatively, poor countries can simply flaunt the rules and try to get an entire industry up and running before the WTO can rule on a case or trade partners can retaliate. Indeed, several countries, most notably China, have shown how such “second-best” strategies can produce rapid growth even under the constraints of the WTO era (Rodrik 2008).

In general, however, we should not expect to see many Japan-style miracles in the future. This conclusion, in turn, implies that the economic gap between rich and poor countries will remain stubbornly persistent.⁹ As Salvatore Babones (2011, 81) points out, Japan is the only large country with a diversified economy that has risen from a below-average level of development to the upper tier of the world economy. Our results indicate that this achievement stemmed, in no small part, from special international circumstances. Of course, economic convergence is possible, but Japan’s experience suggests that convergence is the exception rather than the norm and that the success of any growth model will depend, to some degree, on the peculiarities of a country’s geopolitical circumstances.

The most important point to be made, therefore, is that the study of economic development should pay closer attention to *historically specific geopolitical contexts*. We believe that this paper demonstrates how such factors can be rigorously examined by grafting “qualitative flesh onto quantitative bones” (Tarrow 1995) – combining the granularity of historical research with the rigor and mathematical precision of case-

⁹For all the talk of global economic convergence, it is important to note that the difference in income levels between developed and developing countries remains as wide today as it was in 1950 (Rodrik 2011, 11). Even the most successful developing countries have had trouble catching up. China, for example, still ranks 92nd in the world in terms of per capita income and continues to lag far behind OECD countries in terms of innovation.

specific statistical analysis.

References

- Abadie, Alberto, Alexis Diamond and Jens Hainmueller. 2010. “Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California’s Tobacco Control Program.” *Journal of the American Statistical Association* 105(490):493–505.
- Abadie, Alberto, Alexis Diamond and Jens Hainmueller. 2015. “Comparative Politics and the Synthetic Control Method.” *American Journal of Political Science* 59(2):495–510.
- Abadie, Alberto and Javier Gardeazabal. 2003. “The Economic Costs of Conflict: A Case Study of the Basque Country.” *American Economic Review* 93(1):113–132.
- Amsden, Alice H. 2001. *The Rise of “The Rest”: Challenges to the West from Late-Industrializing Economies*. New York, NY: Oxford University Press.
- Babones, Salvatore. 2011. “The Middling Kingdom: The Hype and the Reality of China’s Rise.” *Foreign Affairs* 90(5):79–88.
- Billmeier, Andreas and Tommaso Nannicini. 2012. “Assessing Economic Liberalization Episodes: A Synthetic Control Approach.” *Review of Economics and Statistics* 95(3):983–1001.
- Bolt, Jutta and Jan Luiten van Zanden. 2014. “The Maddison Project: Collaborative Research on Historical National Accounts.” *The Economic History Review* 67(3):627–651.
- Calder, Kent E. 1988. *Crisis and Compensation: Public Policy and Political Stability in Japan, 1949-1986*. Princeton, NJ: Princeton University Press.

- Denison, Edward Fulton. 1976. *How Japan's Economy Grew So Fast: The Sources of Postwar Expansion*. Washington, DC: Brookings Institution.
- Destler, I. M., Priscilla Clapp, Hideo Sato and Haruhiro Fukui. 1976. *Managing An Alliance: The Politics of U.S.-Japanese Relations*. Washington, DC: Brookings Institution.
- Dingman, Roger. 1993. "The Dagger and the Gift: The Impact of the Korean War on Japan." *The Journal of American-East Asian Relations* 2(1):29–55.
- Dower, John W. 1979. *Empire and Aftermath: Yoshida Shigeru and the Japanese Experience, 1878-1954*. Cambridge, MA: Council on East Asian Studies, Harvard University.
- Encarnation, Dennis J. and Mark Mason. 1990. "Neither MITI nor America: The Political Economy of Capital Liberalization in Japan." *International Organization* 44(01):25–54.
- Forsberg, Aaron. 2000. *America and the Japanese Miracle: the Cold War Context of Japan's Postwar Economic Revival, 1950-1960*. Chapel Hill, NC: University of North Carolina Press.
- Gao, Bai. 1997. *Economic Ideology and Japanese Industrial Policy: Developmentalism From 1931 To 1965*. New York, NY: Cambridge University Press.
- Gao, Bai. 2001. *Japan's Economic Dilemma: The Institutional Origins of Prosperity and Stagnation*. New York, NY: Cambridge University Press.
- Gordon, Andrew. 1998. *The Wages of Affluence: Labor and Management in Postwar Japan*. Cambridge, MA: Harvard University Press.
- Hoff, Joan. 1994. *Nixon Reconsidered*. New York, NY: BasicBooks.

- Horiuchi, Yusaku and Asher Mayerson. 2015. "The Opportunity Cost of Conflict: Statistically Comparing Israel and Synthetic Israel." *Political Science Research and Methods*, forthcoming.
- Hunsberger, Warren S. 1972. Japan-United States Trade-Patterns, Relationships, Problems. In *Pacific Partnership: United States-Japan Trade, Prospects and Recommendations for the Seventies*, ed. Jerome Cohen. Lexington, MA: Lexington Books.
- Johnson, Chalmers. 1995. "The 1955 System and the American Connection: A Bibliographic Introduction." Working Paper 11. Oakland, CA: Japan Policy Research Institution.
- Johnson, Chalmers A. 1982. *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975*. Stanford, CA: Stanford University Press.
- Kapur, Nikhil. 2011. *The 1960 U.S.-Japan Security Treaty Crisis and the Origins of Contemporary Japan*. PhD Dissertation, Harvard University.
- Kim, Nam G. 1997. *From Enemies to Allies: The Impact of the Korean War on U.S.-Japan Relations*. San Francisco, CA: International Scholars Publications.
- Kōsai, Yutaka. 1986. *The Era of High Speed Growth: Notes on the Postwar Japanese Economy*. Tokyo, Japan: University of Tokyo Press.
- LaFeber, Walter. 1997. *The Clash: A History of U.S.-Japan Relations*. New York, NY: WW Norton & Company.
- Metzler, Mark. 2013. *Capital As Will and Imagination: Schumpeter's Guide to the Postwar Japanese Miracle*. Ithaca, NY: Cornell University Press.

- Miller, Jennifer M. 2012. *Building a New Kind of Alliance: The United States, Japan, and the Cold War, 1950-1961*. PhD Dissertation, University of Wisconsin-Madison.
- Mochizuki, Mike M. 2001. U.S.-Japan Relations in the Asia-Pacific Region. In *Partnership: The United States and Japan, 1951-2001*, ed. Akira Iriye and Robert A. Wampler. Tokyo, Japan: Kodansha International.
- Nakamura, Takafusa. 1995. *The Postwar Japanese Economy: Its Development and Structure, 1937-1994*. 2nd ed. Tokyo, Japan: University of Tokyo Press.
- Nishimizu, Mieko and Charles R. Hulten. 1978. "The Sources of Japanese Economic Growth: 1955-71." *The Review of Economics and Statistics* 60(3):351–361.
- Packard, George R. 1966. *Protest in Tokyo: The Security Treaty crisis of 1960*. Princeton, NJ: Princeton University Press.
- Pempel, T. J. 1987. "The Unbundling of 'Japan, Inc.': The Changing Dynamics of Japanese Policy Formation." *Journal of Japanese Studies* 13(2):271–306.
- Pempel, T.J. 1999. The Developmental Regime in A Changing World Economy. In *The Developmental State*, ed. Meredith Woo-Cumings. Ithaca, NY: Cornell University Press.
- Roberts, John G. 1979. "The 'Japan Crowd' and the Zaibatsu Restoration." *Japan Interpreter* 12(3-4):384–415.
- Rodrik, Dani. 2008. "Second-Best Institutions." *American Economic Review* 98(2):100–104.
- Rodrik, Dani. 2011. "The Future of Economic Convergence." Working Paper 17400, National Bureau of Economic Research.

- Rosenbaum, Paul R. 1984. "The Consequences of Adjustment for a Concomitant Variable that Has Been Affected by the Treatment." *Journal of the Royal Statistical Society. Series A (General)* 147(5):656–666.
- Samuels, Richard J. 1987. *The Business of the Japanese State: Energy Markets in Comparative and Historical Perspective*. Ithaca, NY: Cornell University Press.
- Samuels, Richard J. 1994. *"Rich Nation, Strong Army": National Security and the Technological Transformation of Japan*. Ithaca, NY: Cornell University Press.
- Samuels, Richard J. 2001. "Kishi and Corruption: An Anatomy of the 1955 System." Working Paper 83. Oakland, CA: Japan Policy Research Institution.
- Sasaki, Takeshi. 1991. "Postwar Japanese Politics at a Turning Point." *The Japan Foundation Newsletter* 18(5–6):1–7.
- Schaller, Michael. 1985. *The American Occupation of Japan: The Origins of the Cold War in Asia*. New York, NY: Oxford University Press.
- Schaller, Michael. 1997. *Altered States: The United States and Japan Since the Occupation*. New York, NY: Oxford University Press.
- Schaller, Michael. 2001. The United States, Japan, and China at Fifty. In *Partnership: The United States and Japan, 1951-2001*, ed. Akira Irie and Robert A. Wampler. Tokyo, Japan: Kodansha International.
- Shimizu, Sayuri. 2001. *Creating People of Plenty: The United States and Japan's Economic Alternatives, 1950-1960*. Kent, OH: Kent State University Press.
- Swenson-Wright, John. 2005. *Unequal Allies?: United States Security and Alliance Policy Toward Japan, 1945-1960*. Stanford, CA: Stanford University Press.

- Tarrow, Sidney. 1995. "Bridging the Quantitative-Qualitative Divide in Political Science." *American Political Science Review* 89(2):471–474.
- Uchino, Tatsurō. 1983. *Japan's Postwar Economy: An Insider's View of its History and its Future*. 1st english ed. New York, NY: Kodansha International.
- U.S. Department of State. 1952–1954. *Foreign Relations of the United States, 1952-1955, Japan, Volume XIV*. Washington, DC: U.S. Government Printing Office.
- U.S. Department of State. 1955–1957. *Foreign Relations of the United States, 1955-1957, Japan; Korea, Volume XXIII*. Washington, DC: U.S. Government Printing Office.
- U.S. Department of State. 1958–1960. *Foreign Relations of the United States, 1958-1960, Japan; Korea, Volume XVIII*. Washington, DC: U.S. Government Printing Office.
- Welfield, John. 1988. *An Empire in Eclipse: Japan in the Postwar American Alliance System, A Study in the Interaction of Domestic Politics and Foreign Policy*. Atlantic Highlands, NJ: Athlone Press.
- World Bank. 1993. *The East Asian Miracle: Economic Growth and Public Policy*. New York, NY: Oxford University Press.