

Swiss Watch Cycles: Evidence of Corruption during Leadership Transition in China^{*}

Xiaohuan Lan Wei Li
Cheung Kong GSB Cheung Kong GSB

October 24, 2013

Abstract

In democratic countries, costs of public elections and campaigns are enormous. Without democratic elections, however, costs related to transition of political power are still high but more secretive. During leadership transitions and government personnel turnover in China, expensive and inconspicuous luxury wrist watches emerge as a medium of corrupt exchanges and a popular gift to give officials of mainly men. From 1993 to 2010, during regular power transitions that occur every five years, Chinese import of luxury watches tripled. This pattern does neither exist in Chinese import of non-luxury watches, nor in the import of luxury watches in Hong Kong, Singapore, or the United States.

Key Words: Corruption, Leadership Transition, China, Import, Luxury Consumption

^{*}Comments are welcome. Lan: xhlan@ckgsb.edu.cn. Li: wli@ckgsb.edu.cn. We thank Konrad Burchardi, Roger Gordon, Ben Li, Anthony Liu, and seminar participants at the Cheung Kong GSB and the University of Virginia for comments.

1 Introduction

In democracies across the developed and developing world, the costs of elections are enormous. In the United States, the largest developed democracy, presidential and congress candidates spent \$7 billion in the 2012 election cycle.¹ In India, the largest developing democracy, the national elections spent \$3 billion on campaign expenditures in 2009 (Kapur and Vaishnav, 2011). In addition to these visible costs, economists and political scientists have documented numerous types of manipulations and distortions during election cycles, such as distributive politics of politicians targeted to winning votes and investments of business people in maintaining political connections.² Natural questions arise: Are these costs of power transition inherently unique to democratic elections? In the world's largest undemocratic country, China, are these costs avoidable, without public elections and campaigns?

As the ruling party, the Communist Party of China (CPC) has held its congress regularly every five years since 1977. During congress years, hundreds of thousands CPC committee members are selected, at both local and national levels. These are leaders of Chinese polity. Following their installment, the CPC committees further change personnel appointments across all levels of government units, the military, judicial system, state-owned enterprises, and other public institutions. Given the dominant role of Chinese government in the economy and the Chinese authoritarian political system, official positions could be highly remunerative and be “sold” in under-the-table transactions. During leadership transitions, officials who are eligible for promotions have incentives to send gifts or money to officials who have influence over official appointments. When a new leadership team is expected to be installed, business people and officials also need to establish new connections and to form new official-business ventures. Appropriate gifts can likewise grease this process. In 2012, a *New York Times* article reported that this Chinese culture of gift-giving has been a driving force behind the booming Chinese demand for global luxury brands, so much so that “Chinese police inspectors are now studying how to recognize luxury brands to help them expose corruption.”³

Expensive but inconspicuous, luxury wrist watches emerge as an ideal gift to give government officials of mainly men. Luxury watches have high value densities in a small package, and are easy to store, transport, and hide. Some of the top branded watches also retain

¹The number is from the Federal Election Commission, http://www.fec.gov/press/press2013/20130419_2012-24m-Summary.shtml, accessed on October 16, 2013.

²The empirical research in this line is large and active. See some recent evidence in France (Bertrand et al., 2006), Russia (Akhmedov and Zhuravskaya, 2004), Brazil (Gingerich, 2010), and India (Sukhtankar, 2012). Golden and Min (2013) review the studies of distributive politics related to election in more than three dozen countries.

³Master, Farah, “As Beijing Clamps Down on Gift-Giving, Luxury Goods Losing Their Appeal,” *New York Times* (2012, September 24).

their value remarkably well in worldwide resale markets, and can be easily pawned for cash. An internet search by the authors reveals that expensive watches were an indispensable part of nearly all ill-gotten wealth. In the fall of 2012, for example, several government officials were investigated for graft because internet activists uncovered photographs of them wearing watches that they could not afford.⁴ On February 6, just four days before the Chinese New Year in 2013, the Chinese government issued a ban on television advertisements touting Swiss watches as “gifts for leaders” because of concerns that they may conjure images of official graft and further erode public faith in the government. Shares of two Hong Kong watch retailers fell 8% and 13% just two days later.⁵

This paper finds that, from 1993 to 2010, fluctuation in the import of luxury watches in China was driven by the CPC congress cycles. The peaks of the imports coincide with leadership transitions and government personnel turnover that regularly occurs every five years. During the transition years, the difference-in-differences (DD) estimates show that luxury watch imports in China triple, compared to non-luxury watch imports in China, or to luxury watch imports in Hong Kong, Singapore, or the U.S. For example, during the leadership transition between 2006 and 2007, roughly \$197 million U.S. dollars or 60,723 pieces of luxury watches were attributable to an abnormal surge in demand caused by the transition.

In democratic elections, not only is winning votes costly for politicians, maintaining valuable political connections is also expensive for business people. For example, politically connected CEOs in France alter their hiring and firing decisions in order to help politicians in their reelection efforts (Bertrand et al., 2006), and politically connected sugar mills in India appropriate their financial resources for helping elections (Sukhtankar, 2012). Our paper suggests that, even without public elections, business people still have to pay for helping their political allies in power transitions and for building connections to new faces in government. Different from public campaign funds, however, these payments are secretive and seen as a type of political corruptions.

China is widely perceived to be one of the most politically corrupted countries in the world.⁶ The coincidence between leadership transitions and the surge in bribes documented

⁴Yang Dacai, director of Shaanxi province’s safety inspection bureau, became an overnight suspect of corruption among China’s internet activists when he was caught on camera smiling on the scene of a deadly highway accident on August 24, 2012. Enraged internet activists quickly posted photos of him wearing expensive watches on Weibo or Microblog, twitter-like social networks in China. Weibo users identified at least 11 Swiss watches as being owned by Mr. Yang. Mr. Yang was later removed from his post, investigated and found guilty of corruption.

⁵See: <http://www.ft.com/cms/s/0/3d73d754-71e1-11e2-886e-00144feab49a.html#axzz2KhOj0OuS>, accessed on February 12, 2013.

⁶China was ranked among the 10% most corrupted countries out of 140 countries in 2001 based on the International Country Risk Guide (Svensson, 2005), and among the bottom 30% out of over 200 countries

in this paper reveals some characteristics of corruption in China, which could help understand the theories of corruption. Shleifer and Vishny (1993) suggest that competition between corrupted officials may reduce the cost of bribery. This implication hinges on the assumption that competitive officials could provide similar public goods independently. However, contemporary Chinese corruption is often organized as a cooperative venture, in which a group of officials and business people work as partners in crime and share the profits of their corruption. The venture generates rents when officials provide privileged access to scarce resources (*e.g.*, licenses, land, bank loans, subsidies or government contracts) to business people, or help them to evade regulations.⁷ In this scenario, even a partial turnover among officials creates new demand for bribery, and the competition for valuable official positions may significantly raise the cost of bribery (Shleifer and Vishny, 1994). The cyclical nature of luxury watch imports also highlights the temporary nature of bribery. Harstad and Svensson (2011) emphasize that compared to legislative changes obtained through lobbying, bending the rules through bribery is almost certainly temporary since corrupted officials can seldom commit to not asking for bribes in the future and corrupt deals are not enforceable in courts. This paper highlights another aspect of the temporary nature of bribery: turnover in official positions could compromise well-formed corruption networks that rely on mutually trusted partnerships.

Our paper also contributes to the research on measuring corruption. Due to the secretive and illegal nature of corruption, measuring corruption poses a significant research challenge. Despite their widespread use, perception-based indices of corruption and other survey-based measures have been criticized for many types of potential biases (Svensson, 2005; Sequeira, 2012). Our paper contributes to the fast-growing research on direct measures on corruption.⁸ We detect abnormal changes in luxury watch imports caused by leadership transitions, deviating from the “normal” volume of imports predicted by a benchmark gravity model. We apply a simple DD estimator on the residuals of watch imports predicted by a gravity model, using either non-luxury watch imports in China or luxury watch imports in other countries as a control group.

China, together with Hong Kong and Macau, has become the world’s second largest market of personal luxury goods (Bain & Company, 2012). Luxury goods represent a visible display of status, and the demand for these goods would be typically explained by income

in 2010 based on the index of Control of Corruption (Kaufmann et al., 2010).

⁷Studies have shown that firms benefit from their connection to the Communist Party of China or Chinese governments (for example, Li et al., 2008; Jia and Lan, 2013). Profiting from political connections isn’t unique to China, however. For a related literature based on experiences from other countries, see, for example, Fisman (2001), Khwaja and Mian (2005), Faccio (2006), and Ferguson and Voth (2008).

⁸For reviews on this relatively new body of literature, see Olken and Pande (2012), Sequeira (2012) and Banerjee et al. (2012).

level and income dispersion (Charles et al., 2009, Heffetz, 2011). We do find that both GDP and income inequality are positively related to luxury watch imports. Our estimates, however, suggest that the major factor behind the demand for luxury watches in China is corruption.

The rest of the paper is organized as follows. Section 2 discusses the institutional environment. Section 3 describes the data. Section 4 presents the results and Section 5 concludes.

2 The Institutional Environment

2.1 Party and State

Since the founding of the People’s Republic in 1949, China has been governed by the ruling Communist Party of China (CPC).⁹ The standing committee of the Politburo of the Central Committee of the CPC, with seven members currently, exercises collective control over administrative, legislative, judiciary, and military powers in China. The CPC entrusts the institution of the state to carry out its policies and conduct day-to-day administration. The General Secretary of the Central Committee, who leads the Politburo Standing Committee, also serves as the President and the Chairman of the Central Military Commission.¹⁰ The second and third ranked members of the Politburo Standing Committee are often the Premier of the State Council—the Cabinet—and Chairman of the National People’s Congress (NPC).¹¹ Other committee members often hold powerful state and party offices including Chairman of the National Political Consultative Conference (PCC),¹² heads of the party’s Central Propaganda Department and Organization Department, and heads of provincial governments.

China is organized as a unitary state with four levels of subnational governments: 31 provincial level divisions, 374 prefectures or cities, 2,789 counties or urban districts, and 33,368 townships.¹³ Villages, where gross-root election has been introduced since the late 1980s (Martinez-Bravo et al., 2012), are nominally self-governing organizations, and are not

⁹For a short introduction to China’s political system, see Lawrence and Martin (2012).

¹⁰While the office of the President plays a ceremonial role, since 1993, the General Secretary of the CPC has held the office of the President and the Chairmanship of the Central Military Commission.

¹¹The NPC nominally, according to China’s constitution, holds the ultimate political power in China in legislation, decision-making, appointment and government oversight.

¹²The Conference is an advisory body consisting of delegates from a range of political parties and organizations. The CPC remains the dominant party in the Conference.

¹³The information is current as of February 12, 2013, when we accessed the People’s Daily Online: <http://english.peopledaily.com.cn/90785/7892933.html>. The provincial level administrative divisions include 22 provinces, 4 municipalities that report directly to the central government, and 5 autonomous regions. In the paper, we refer them simply as provinces.

officially part of the government. The central CPC committee delegates subnational CPC committees and government units to act on its behalf. Mirroring the hierarchy of power at the center, the secretary of the local CPC committee is the first in command at each subnational level, while the chief executive (*e.g.*, provincial governor or mayor) is actually the second in command. This arrangement institutionalizes the party’s control over the state.

Another institution through which the CPC exercises power is the nomenclature system, run by the Organization Departments of CPC Committees at both the central and subnational levels. With it, the CPC exercises “the party’s control over government officials” by controlling personnel appointments across all levels of party committees, government units, the military, state-owned enterprises and other public institutions (Chan, 2004).¹⁴ The system becomes more important with the implementation of reforms that use key political and economic indicators for performance evaluation and promotion, set term limits and mandatory retirement age for cadres at each rank, and encourage job rotation. However, just as the Central Organization Department ultimately reports to the General Secretary, a local Organization Department reports to the local secretary. This arrangement gives the first in command in each subnational jurisdiction a great deal of influence in official appointments.

2.2 Leadership Transition

Since the 11th national party congress in 1977, which kindled reforms in China, the CPC has held its congress regularly every five years.¹⁵ It has gradually institutionalized the congress as a venue not only for reviewing past accomplishments, announcing new policies, but also for selecting new local and national leaders. Since the abolition of lifetime appointment and the implementation of mandatory retirement in the 1980s, each CPC congress has resulted in a large scale transition of political leaders at both local and national levels.

Each party congress starts at the lowest subnational division—the townships—where new leadership for each township is determined in an increasingly competitive internal election. Each township party congress also selects delegates for the party congress at the next higher level—the county level. Each county level party congress then convenes and elects new leadership at the county level and delegates for the city level congress. The process continues to the city-level, then provincial level, and finally, after almost two years, ends with the conclusion of the National CPC Congress in Beijing. Figure 1 shows the time line of the

¹⁴Li and Zhou (2005) documents the process of appointments and promotion of provincial leaders.

¹⁵Founded in 1921, the CPC held 10 congresses before Mao’s death in 1976. The most recent 18th congress concluded in November 2012. For a brief history of CPC congresses, see the Xinhua News Agency’s official history portal, http://news.xinhuanet.com/ziliao/2003-01/21/content_698625.htm.

18th CPC Congress. The subnational congresses started first in January 2011 in Liaoning province at the township level and ended in July 2012 with the conclusion of the provincial level congress for the Beijing municipality. They elected 275,205 CPC committee members at the township level, 30,028 at the county level, 4,384 at the prefecture level and 404 at the provincial level.¹⁶ Held in November 2012 in Beijing, the 18th CPC National Congress elected 205 members of the Central Committee and 7 members of the Politburo Standing Committee, which forms the policy-setting headquarter of the party and the state.

[Figure 1 about here]

Officials in various institutions of the state are then appointed from candidates nominated by the party in the subsequent local and national meetings of the People’s Congress and the People’s Political Consultative Conference held shortly after the party congress. A seat on the CPC standing committee at a jurisdiction are virtually guaranteed significant posts in either party or state organizations. With the exception of the General Secretary and the Premier, who usually serve two consecutive five-year terms, other official positions are, in principle, subject to a five-year reshuffle finalized in a regular party congress. Given China’s political institution, it is not surprising that work experience in party committees have been shown to be important for promotion for ministerial level or higher elites (Huang, 2008) and for county-level officials (Landry, 2000).

2.3 Corruption

While much of China’s economic growth in the past three decades could be attributable to the economic liberalization that started in 1978,¹⁷ the government has retained its dominant role in the economy. In addition to regulating business entry, operations, and exit, the government allocates land and heavily influences the allocation of capital and the mobility of labor (Gordon and Li, 2005 and 2011). However, officials with significant financial responsibilities are not known to receive explicit compensations that are competitive when compared to private sector peers. Since the government has yet to disclose income earned or wealth held by officials, we don’t have verifiable data documenting official’s earnings, whether explicit or implicit. Based on a public speech made by a high ranking official,¹⁸ the regular monthly salary of a member of the CPC politburo was just over 11,000 yuan in 2011 or around

¹⁶The numbers are from the Xinhua News Agency: http://news.xinhuanet.com/politics/2012-07/30/c_112570249.htm, accessed on April 12, 2013.

¹⁷See for example, Li (1999), Lau et al. (2000), and Gordon and Li (2005) among many others.

¹⁸See, for example, a news report of the speech published on June 24, 2011 by *Nanfang Zhoumuo* (a weekly magazine), available online at <http://www.infzm.com/content/60713>. We accessed it on March 21, 2013. The approximate US dollar amount is obtained using market exchange rate in the end of June 2011.

US\$1,700. While this is hardly a princely sum, officials also receive various, above-the-table, supplemental earnings, and are often given generous perks, including housing, official cars, and reimbursable banquets and entertainment.

Anecdotal evidence also suggests that official positions can be far more remunerative than what official pays and perks suggest. There is a widely held perception that corruption in China is pervasive, as shown in Introduction. Based on 2,802 corruption cases reported by the official *Procuratorate Daily* between 2000 and 2009, Gong and Wu (2012) report that the average amount of proceeds from corruption is 30 million RMB (about \$4.4 million using the 2009 exchange rate). Court papers also reveal that contemporary Chinese corruption is often organized as a cooperative venture, in which a group of officials and business people, who have formed a network of long-lasting social connections and developed mutual trust, are partners in crime and shareholders of the spoil. The venture generates rents when the officials provide privileged access to scarce resources (*e.g.*, licenses, land, bank loans, subsidies or government contracts) to businesses in the network, or to help them to evade regulations.¹⁹ To avoid the appearance of impropriety, a careful official may only take “gifts” that are not easily detected and will avoid take possessions of corruption proceeds in his own name. He may use his relatives as proxies, defer the payouts, or simply enjoy a princely life-style on the purses of his business accomplices.

The venture invests in their own officials by making use of its financial and political wherewithal to help them advance in rank and in responsibility. With pervasive corruption, official positions are valuable, and therefore are objects of corruption to be sold by higher level officials to eligible candidates. The investments may thus include buying offices for officials in the venture and helping them achieve their performance targets. Gong and Wu (2012) finds that corruption related to official promotion and appointments is in fact quite common in China, accounting for 13% of the 2,802 convicted cases, the second largest category of corruption. Examining 72 corruption cases involving province-level leaders between 2003 and 2011, Tu (2011) finds that 31 involved selling or buying government offices.

Since corrupt exchanges are illegal, officials and business people who intend to get involved usually find it imperative to first establish connections and build personal trust. Rituals commonly used to facilitate trust building include banquets and gift giving. During the initial introduction, it is almost obligatory that people who seek favors offer gifts to officials who are in positions to grant them. When an official accepts an expensive gift, it would be taken as a sign that personal trust and connection has been established (Li, 2011). Since

¹⁹While China has many health and safety regulations that are intended to benefit the public, the relative high frequency with which unsafe foods and products are exposed after long periods of coverup suggest that corruption may be prevalent among Chinese regulators.

most Chinese officials are men, managers of global luxury brands have found that in China's luxury market is unique because men play a more important role than women. Research by an investment bank show that men accounted for at least 55% of the market, well above the global average of 40%.²⁰

2.4 Luxury watch cycles

Swiss watches possess some unique features that make them highly desirable as expensive gifts. To begin with, they can have high value densities. With a median price for imported luxury watches above \$5000 in China (Table 2), they wrap a lot of value in a tiny package. As such they can be inconspicuously handed from one person to another. They also have high value retention. Some of the top branded watches retain their value remarkable well in worldwide resale markets, and can be easily pawned for cash. And because of their brand cachet, they are often counterfeited. While it may be counter intuitive, the apparent availability of counterfeits may actually increase the desirability of the genuine watches as an medium of corruption exchanges. One scheme discussed on internet forums is to give two watches, one genuine and one counterfeit, as gift. If such an exchange were ever investigated, the receiver can hand over the counterfeit, which usually costs less then 200 yuan. Anecdotes suggest that luxury watches have become a focal point in gift-giving in general and corrupt exchanges in particular. The average annual growth rate of the dollar value of luxury watch imports is 44% after adjusting for U.S. inflation, more than four times the average GDP growth rate in China.

To the extent that leadership transition brings about new leadership teams in many local governments, we would expect luxury watch imports to exhibits cyclical movements over time. Specifically, we expect gift-giving of luxury watches to rise during leadership transition. While term limits and leadership rotation are intended to bring about more competition in the selection of officials and to weaken entrenched control at various levels of governments, they also add uncertainty to local politics and government-business relations. During the two-year period of leadership transition, officials who are eligible for promotions would have incentive to request "sponsorship" from local businesses to "lobby" for them. Expensive and inconspicuous gifts given to officials who have influence over official appointments can help smooth the path to promotion. When a new leadership team is expected to be installed, local businesses and officials will need to establish new connections and to form new official-business ventures. Expensive and inconspicuous gifts can likewise grease the process. We therefore expect that demand for luxury watches is expected to rise during the leadership

²⁰<http://luxurysociety.com/blog/2013/02?page=3>, accessed on March 20, 2013.

transition years.

The rise of in the incidence of corruption during leadership transition is presumably prevalent enough across China so that a specific term has been coined to describe it: *huan jie fu bai* (corruption during leadership transition). As a reflection of the severity of the problem, the Organization Department of the CPC and the Disciplinary Committee of the CPC have vowed each time to curb it. They often announce new policies and methods to curb corruption just before the transition process, and they send special supervision teams to closely monitor the processes of local transition.²¹

To test the presence of corrupt exchanges during leadership transition and to measure the the extent to which luxury watch imports have been used as a medium for such exchanges or a store of ill-gotten wealth, we examine imports of both expensive and relatively inexpensive watches reported by China over time and compare the pattern of imports with other countries.

3 Data

Our data are from the United Nations Commodity Trade Statistics Database (UN COMTRADE), downloaded from the World Bank's World Integrated Trade Solution (WITS) database. The database contains trade statistics reported by over 140 countries, recorded by year, commodity and partner country. Detailed trade data on wrist watches reported by China are available in ten 6-digit HS sub-categories.²² Table 1 lists the HS codes and product descriptions. For each 6-digit wrist watch sub-category and each year between 1993 and 2010, we obtain import values reported by China from the following ten partner countries (or independent customs territories): France, Germany, Hong Kong, Italy, Japan, Singapore, Switzerland, Thailand, the United Kingdom, and the United States. In 2010, the ten partners accounted for 95% of the total values of watch imports in China. We aggregate imports from the rest of the world into one source, so we have a total of 11 partners. Values of watch imports reported by China thus cover 10 6-digit products from 11 partners between 1993 and 2010. The maximum number of observations is thus $10 \times 11 \times 18$, or 1980 product-partner-years, while the available observations are 1,063. Most of the missing observations occurred in early years when China had a more restrictive trade regime and a low average income.

²¹For the announcement in 2001, see <http://dangshi.people.com.cn/GB/146570/198300/200220/200231/12727900.html>; in 2006, see http://news.xinhuanet.com/newscenter/2006-05/18/content_4568671.htm; in 2011, see <http://www.nbcp.gov.cn/article/rdzz/201201/20120100015778.shtml>.

²²Harmonized commodity description and coding system.

[Table 1 about here]

Our data covers three complete processes of leadership transition occurred during the 15th CPC Congress in 1996 and 1997, the 16th in 2001 and 2002, and the 17th in 2006 and 2007: For each of the three congresses, we observe values of imports three years before, two years during, and three years after.²³ We also obtain quantity data on watch imports, but the data are only available from 2000 onwards.

We divide wrist watches into two product groups. A wrist watch belongs to the luxury group if its mechanism is mechanical, its case is made of precious metal or of metal clad with precious metal (HS code=910121 or 910129), and it is exported from France, Germany, Italy, Switzerland, or the U.S. Among the top 40 luxury watch brands tracked by the annual World Watch Report, published by the Digital Luxury Group, 28 are from Switzerland, 7 from France, 2 from Germany, 2 from Italy, and 1 from the U.S.²⁴ The rest of the wrist watches form the non-luxury group. By definition, luxury watches include 2 6-digit product sub-categories imported from 5 partners between 1993 and 2010. The maximum numbers of observation of luxury and non-luxury watches are thus 180 ($2 \times 5 \times 18$) and 1700 product-partner-years. The available observations for luxury and non-luxury watches are 69 and 994 product-partner-years, with most of the missing observations occurring in early sample years. In 2010, the median price of luxury watches in China, measured by the unit value that includes cost, insurance and freight (CIF), was US\$5590, while the medium CIF unit value of non-luxury imported watches was US\$44. Our classification of luxury watches captures well the notion that luxury watches have high value density.

Table 2 reports summary statistics of imports of luxury and non-luxury wrist watches. In comparison, we also report similar import data from Hong Kong, Singapore and the U.S. For each of the three reporters, we obtain import values and quantities from 11 partners—the same set of ten exporting partners (minus oneself) plus China, and the rest of the world as one source. Since import values are in principle available from 1993 on and import quantities are available only from 2000 on, the available observations for import values are much higher than for import quantities. There are also more missing observations in Chinese data, likely

²³The HS 6-digit commodity-level data of Chinese import values are available from 1992 to 2011. We exclude 1992 and 2011 since 1992 is the second year of the 14th Congress and 2011 the first year of the 18th Congress, and we do not have data that cover the full process of either of the two congresses .

²⁴28 brands from Switzerland are: Audemars Piguet, Baume & Mercier, Blancpain, Breguet, Breitling, Chopard, Ebel, Roger Dubuis, Pierre Jaquet Droz, Franck Muller, Frédérique Constant, Girard-Perregaux, Hublot, IWC Schaffhausen, Jaeger-LeCoultre, Longines, Maurice Lacroix, Omega, Patek Philippe, Piaget, Rado, Raymond Weil, Rolex, TAG Heuer, Tudor, Ulysse Nardin, Vacheron Constantin, and Zenith. Seven brands from France are Cartier, Chanel, Dior, Hermès, Richard Mille, Louis Vuitton, and Van Cleef & Arpels. Two brands from Germany are A. Lange & Söhne and Montblanc. Two from Italian are Bvlgari and Panerai. One from the U.S. is Harry Winston. For details, see <http://www.worldwatchreport.com> (which we accessed on December 20, 2012).

caused by below threshold import volumes as a result of autarkic trade policies and low income in early sample years.

[Table 2 about here]

A comparison of the summary statistics across countries/territories shows that the Chinese imports in both value and quantity have lower means, but higher standard deviations. This is consistent with the fact that Chinese imports of watches started at much lower levels than each of the three controls, but grew at the fastest rate. What is striking in the data is the fact that China and Hong Kong import very expensive luxury watches. Even though Singapore has a dominant ethnic Chinese population, the median value of luxury watches it imports is US\$992, only a fraction of the median value in China or Hong Kong. Hong Kong leads in median value not only in the category of luxury watches, but also in the category of non-luxury watches. Hong Kong and Singapore, despite their small population size, report high volumes of watches imports. Both are larger importers than China, and Hong Kong exceeds even the U.S. The data therefore suggests that both Hong Kong and Singapore are regional trade hubs and substantial reexports from them must occur.

Table 2 also shows the log of GDP of each country, measured in millions of current U.S. dollars (converted to U.S. dollars using market exchange rates for non-U.S. economies) and drawn from the Penn World Table V7.0 (Heston et al., 2011). The data confirm China's status as a fast growth economy. We also add a measure of income inequality, defined as the ratio of income share of the top 20% income earners to the bottom 20%. We obtain data for computing income inequality for China from World Development Indicators (hosted by the World Bank), for Hong Kong from its Census and Statistics Department, for Singapore from its Department of Statistics, and for the U.S. from the U.S. Census Bureau. When data frequency is less than annual, in the case of China (every three years) and Hong Kong (every five years), we use available data to impute missing values by interpolation. The annual data of income distribution in Singapore are only available since 2000, and we impute the data from 1993 to 1999 by extrapolation from available data. Table 2 shows that the income inequality was the lowest in China in 1993, but it grew fastest over the sample period.

4 Empirical Analysis

In order to measure abnormal changes in imports of luxury watches over cycles of leadership transitions in the Chinese government, we need a benchmark model for predicting normal changes in imports. In the international trade literature, the gravity equation, which relates bilateral trade volumes to country size and distance, has been found to fit bilateral trade

flows well.²⁵ Our analysis therefore starts with the gravity model, and we keep the residuals from the regression as detrended data. To empirically identify the “treatment” effects of leadership transition on the abnormal imports of luxury watches, we then apply a difference-in-differences approach on the detrended data. We use imports of non-luxury watches in China, or imports of luxury watches in other countries, as the control group.

4.1 Trend of Total Watch Import

Figure 2 shows time-series plots of the aggregate value of imports (in log) of luxury and non-luxury wrist watches reported by China, Hong Kong, Singapore and the U.S. We select Hong Kong and Singapore as the comparison countries because their societies are heavily influenced by the Chinese culture, but their political economy institutions have little in common with those found on mainland China. If observed patterns of import demand are attributable to shared cultural factors, we would expect to see similar patterns in Hong Kong or Singapore. If, on the other hand, observed patterns of import demand are attributable to political economy factors that are unique in China, we would expect not to see them in import data from Hong Kong or Singapore.²⁶ The inclusion of Hong Kong as a control also affords us the opportunity to investigate the extent to which the influence of Chinese political economy has any spillover effect on the demand for imported watches in Hong Kong. We also include the U.S. as an alternative control country since it differs from China both in culture and in political and economic institutions.

[Figure 2 about here]

Figure 2 shows that imports in China started from the lowest level, but grew at the fastest pace among the four customs territories. Within China, luxury imports grew even faster than non-luxury ones. Combined with the fact China tends to import luxury watches with very high value density, it is not surprising that China has been the fastest growing market for global luxury brands. In Figure 2, watch imports in China and other countries exhibit strong time trends. Any changes in imports around the CPC congress years, which were marked by shaded bars, appear to be dominated by trend growth. Figure 2 also shows the strong negative effect of financial crisis on the demand for luxury watch: the 1998 financial crisis in the East Asia and the 2009 global crisis.

²⁵For reviews of the literature on the gravity equation, see Anderson (2011) and Head and Mayer (2013).

²⁶Taiwan could also be a good control candidate. But its trade data are not available in UN COM-TRADE since it is not a member of the United Nations.

4.2 The Gravity Equation

We first detrend the data by using the gravity equation.²⁷ We regress log value of imports for each product reported by a home country on log home GDP, log partner GDP, and partner dummies that control for distance and trade costs. We also augment the basic gravity model by adding a variable of income inequality. Luxury watch is a status goods and its consumption is used as a form of signaling. Therefore, its demand is not only affected by income but also by income dispersion (Charles et al., 2009).

Take Chinese imports for example, we use the following specification to detrend the data:

$$V_{ift} = (\beta_1 + \beta_2 L_{if})M_t + (\beta_3 + \beta_4 L_{if})M_{ft} + (\beta_5 + \beta_6 L_{if})U_t + \beta_7 L_{if} + \alpha_f + \epsilon_{ift}, \quad (1)$$

Our dependent variable, V_{ift} , is China's reported import value (1,000 U.S. dollars, c.i.f., in logarithm) of good i (identified by a six-digit HS code) from partner country f in year t . M_t and U_t are China's log GDP and income inequality (the ratio of income share of the top 20% income earners to the bottom 20%) in year t , and M_{ft} is log GDP of partner country. L_{if} is the luxury watch dummy that equals 1 if product i imported from partner f is a luxury watch and 0 if product i from partner f is a non-luxury watch. α_f is the partner specific effect, which captures bilateral trade costs arising from distance and bilateral trade institutions. It is important to note that we allow the coefficients on home GDP, partner GDP and home inequality to be different for luxury and non-luxury watch imports. Since luxury watches have higher income elasticities than non-luxury ones and are often consumed by the rich, we build in flexibility in the gravity specification in order to capture the differential trends in luxury and non-luxury watch imports. $\hat{\epsilon}_{ift}$ is our detrended data for China. We apply the same approach to Hong Kong, Singapore, and the U.S.

[Table 3 about here]

Table 3 shows that the gravity model behaves mostly as expected. Chinese GDP is a strong predictor of the value for watch imports. One percent increase in nominal GDP in China is associated with 1.8% increase in the value of watch imports. GDP in the other three countries show a similar effect. The coefficient on, $L_{if}M_t$, the interaction between luxury dummy and GDP, which measures the incremental response of the value of luxury watch imports from one percent increase in nominal GDP, is positive and a sizable 1.02 in China; but isn't statistically significant. The marginal effect of partner country nominal GDP on the

²⁷We also regress log value of imports on either a linear time or a quadratic time trend, and keep the residuals as detrended data. As it turns out, the two approaches give qualitatively identical results.

value of watch imports is small, but significantly more negative for luxury watches. This has a lot to do with the configuration of the global luxury watch industry: Most of the luxury watches made in Switzerland, a rich but relatively small economy, fewer are from Germany, the largest economy in Europe, and still fewer are from the U.S. The large F-statistics of all partner dummies suggest bilateral trade costs explain a significant part of variation in the data.

Income inequality appears to lower overall value of watch imports, but the impact on the value of luxury watch imports appears large and positive in China, even more so in Hong Kong and Singapore, but not in the U.S. As highlighted in Charles et al. (2009), it is not the general income dispersion but the dispersion within a certain reference group, such as race, that affects the consumption of status goods. Compared to the U.S., China, Hong Kong, or Singapore are much more homogenous in race and culture.²⁸ Moreover, Hong Kong and Singapore are also small places with high population densities, which would make signaling even more salient. In Charles et al. (2009), the theoretical prediction of the effect of income dispersion is ambiguous since the richer consume more while the poorer consume less. However, their model is about a more general category of conspicuous goods that even poor people can afford, such as clothing. For goods as expensive as luxury watch, the effect of income dispersion is likely to be positive.

4.3 Fluctuations in the Residuals from the Gravity Equation

We keep the residuals from the regression equation (1), $\hat{\epsilon}_{ift}$, as detrended data. Table 2 also reports the standard deviation of these residuals. In Figure 3, we plot the detrended log values of luxury and non-luxury watch imports for each of the four reporting markets. The cyclical patterns of luxury watch imports emerge in the Chinese data after detrending: Luxury watch imports peak during the CPC congress years when local and national leadership transitions occur. Non-luxury watch imports in China, however, do not exhibit an apparent “pro-transition” cyclicity. Nor do we see a “pro-transition” cyclicity in detrended imports in Hong Kong, Singapore or the U.S.

[Figure 3 about here]

²⁸Han people account for 92% of Chinese population, according to the most recent two census in 2000 and 2010 (National Bureau of Statistics of China: http://www.stats.gov.cn/zgrkpc/dlc/yw/t20110428_402722384.htm). Chinese people account for 92% of the population in Hong Kong in 2012 and 75% in Singapore in 2013. (GovHK: <http://www.gov.hk/en/about/abouthk/facts.htm>; Department of Statistics of Singapore: <http://www.singstat.gov.sg/Publications/population.html>)

The detrended time series show a more pronounced fall in luxury watch imports in 2009 than the original time series in Figure 2 in all markets except Hong Kong. The global financial crisis that started in the U.S. in the fall of 2008 had a large impact on worldwide demand for luxury watches. Similarly, the Asian financial crisis in 1998 greatly reduced the demand for luxury watches in China and Hong Kong. Figure 3 also shows that demand for luxury watches sharply rose in 1994 in China, which fall outside the transition years. This might be the result of an anticipated change in China’s import regime in 1994, when it was decided that the allocation of watch import quotas were to be centralized from local governments to Beijing in 1995. Concerned that they might lose their licenses in 1995, local license holders exhausted their full quotas in 1994 and shifted imports to more expensive watches, resulting in a surge in the value of watch imports. In 1995, there was a subsequent fall in the value of luxury imports under the newly implemented centralized quota regime. Later in Section 4.6, we will discuss quota regime shifts and tariff in China in more details and incorporate them in our analysis.

Instead of using the gravity equation, we can also directly detrend each of the eight aggregate time series in Figure 2, by using log home GDP and a linear time trend. Appendix Figure A1 shows the detrended data from this approach, which display similar fluctuation patterns as in Figure 3.

4.4 Difference-in-Differences Analysis on Residuals

Figure 3 suggests a positive association between leadership transitions in China and a cyclical increase in the imports of luxury watches, whether we use non-luxury watches imports as the control or luxury watch imports reported by other markets as control. We apply a difference-in-differences (DD) approach on the detrended data, $\hat{\epsilon}_{ift}$. To begin with, we use imports of non-luxury watches as the control group. These imports are the utilitarian counterparts of luxury watches. Since they do not have high value density or high value retention, and are often not considered status goods, they are not known to be widely used as a medium of corrupt exchanges.

In order to further simplify our DD analysis, we average the 18 years of detrended data into seven intervals, based on the three leadership transition cycles in China. The seven intervals are: 1993-1995 (before the first transition), 1996-1997 (during the first transition), 1998-2000 (after the first but before the second transition), 2001-2002 (during the second transition), 2003-2005 (after the second but before the third transition), 2006-2007 (during the third transition), and 2008-2010 (after the third transition). Then, instead of using multiple years within each cycle, we simply compare the average residual during the transition

(*treatment*) to either pre-transition or after-transition (*control*). This approach reduces the potential inference bias caused by serial correlation in the DD estimator with multiple years (Bertrand et al., 2004). The downside is a smaller sample size and lower power. We will return to the inference issues related to serial correlation and the number of clusters in Section 4.6.

[Figure 4 about here]

Figure 4 shows the average detrended data, which clearly suggests a causal DD effect of leadership transitions on luxury watch imports in China. To formally estimate the effect of leadership transitions, we use the following simple DD specification *in each transition cycle*:

$$\hat{\epsilon}_{ift} = \gamma_1 L_{if} + \gamma_2 T_t + \delta L_{if} T_t + \epsilon_{ift}, \quad (2)$$

where $\hat{\epsilon}_{ift}$ is the residual obtained from equation (1). T_t is the leadership transition dummy that equals 1 if period t is a transition period and 0 otherwise, which captures aggregate factors that would cause changes in watch imports even in the absence of corrupt exchanges during leadership transitions. Here, the non-transition period could be the period before a transition, or after a transition, or both. The DD estimator of the “treatment effect” of leadership transitions on luxury watch imports is simply $\hat{\delta}$.

[Table 4 about here]

Panel A of Table 4 shows the estimates of $\hat{\delta}$ in Chinese data. Columns 1-3 are for the first cycle between 1993 and 2000, in which the transition years are 1996 and 1997. Column 1 uses the period before the transition and column 2 uses the period after the transition as the comparison, and column 3 uses both the neighboring periods of the transition as the comparison. Columns 4-6 repeat the exercises in the second cycle between 1998 and 2005, and columns 7-9 are for the third cycle between 2003 and 2010. Finally, column 10 combines all years together. Across different comparison periods and cycles, estimated $\hat{\delta}$ s, the DD “treatment” effect of leadership transitions, are positive and sizable. The magnitude in column 10 is around 1.1 log point, which translates to a surge of about 200% in luxury watch imports from non-transition years to transition years. Other panels in Table 4 show that there is no such an effect on luxury watch imports in other markets. An exception was in Hong Kong between 1996 and 2000, which might reflect the sharp decrease in the demand for luxury watch in 1998 due to the financial crisis. In the U.S. between 2006 and 2010, the positive effects of 2006 and 2007 might reflect the sharp decrease in the demand for luxury watch after the financial crisis in 2008.

The specifications in Table 4 use non-luxury watch imports as the control group. Alternatively, we can analyze the impact of leadership transitions on luxury watch imports in China by restricting our sample to luxury watch imports only, and using luxury watch imports by Hong Kong, Singapore or the U.S. as the control group. To the extent that the demand for luxury watches in these markets are not known, *ex ante*, to be related to China's cycles of leadership transition, the interaction term of China and a transition indicator measures the DD impact of leadership transitions. Table 5 reports the estimates of these interaction terms. Panels A-C show that Chinese imports of luxury watches surge in leadership transition years in each cycle. The estimated magnitude is quite similar to Table 4: 1.1 log point, or about a 200% increase in luxury watch imports from non-transition years to transition years. Panels D-F, as placebo tests, show that there is no such a surge when we compare non-luxury watch imports across countries.

[Table 5 about here]

4.5 Triple-Difference and Alternative Control Commodities

It is straightforward to combine information in Table 5 and conduct a triple-differences estimation. For example, in China and Hong Kong, the triple-differences estimate is simply the DD estimate in luxury watches between the two markets minus the DD estimates in non-luxury watches between the two markets. In other words, the triple-difference estimate over the whole sample period is the estimate in column 10 in Panel A of Table 5, 1.136, minus the estimates in the same column in Panel D, 0.187. The result is 0.949, presented in column 1 in Panel A of Table 6. Columns 2 and 3 in Panel A show the triple-difference estimates by using Singapore or the U.S. as the comparison country. Not surprisingly, the estimates are similar to DD estimates but more accurate thanks to the larger sample size.

Instead of using non-luxury watch as the control group, we can also use other imported commodities and repeat the above analysis. Particularly, we can use other luxury imports that may follow the similar trend as luxury watches. We first use jewelries (HS code: 711311, 711319, 711320). As fashion goods, jewelries share many common characteristics with watches, and most world famous watch manufacturers are also jewelers. Compared to watches, however, jewelries may be less popular as gifts amongst male officials. Of course, some people could also send expensive designer jewelries to the wives or daughters of officials. Unfortunately, it is hard to identify imported luxury jewelries by HS code.

The second category of comparison goods is handbags (HS code: 420221, 420222, 420229). According to a research report by Bain & Company (Bain & Company, 2012) on China's markets of luxury goods, bags are the second fastest growing luxury goods, led by the

fastest growing market of wrist watches. Similar to jewelries, the market of handbags is also dominated by female consumers. Additionally, the unit price of a luxury handbag is usually much lower than a luxury watch, and its value is less retainable and liquid. These features make a luxury handbag less ideal as a gift to government officials.

The third type of comparison goods is cars (HS code: 870321, 870322, 870323, 870324). Though highly valuable, an imported car is much more conspicuous than a watch. A car must be registered whereas a watch is anonymous. The Chinese government also implements strict rules on the types of cars that can be used by government officials. These factors reduce the popularity of cars as a medium of bribery.

We repeat the same triple-differences estimation as in Panel A of Table 6, but replacing non-luxury watch with jewelries, handbags, or cars. The results are reported in Panels B-D of Table 6. The estimates are broadly consistent with, though somewhat larger than, our main estimates in Panel A that uses non-luxury watch as the control commodity. In Panels B-D the number of observations is smaller. As shown in Section 3, we choose trade partner countries based on their trade volume in watch. Some of these partner countries do not export much jewelries, handbags, or cars. For example, though a major exporter of watches, Thailand does not export any car. The smaller sample size in Panels B-D is the result of these missing trade values.

[Table 6 about here]

4.6 Augmented Difference-in-Differences Analysis with Quota and Tax

This section extends our analysis on Chinese watch imports to incorporate policy changes and taxes. We combine the gravity model in equation (1) and the DD specification in equation (2), and this augmented DD model uses all information of 18 years of data, instead of seven intervals used in the last section. We include 17 dummies of year fixed effects τ_t , which control for yearly changes in economic policies, including trade policies over our sample years. This model is flexible to incorporate some shocks that particularly affect luxury watch imports, such as the shift of quota regime and financial crisis. Moreover, we add tariff and other taxes that could affect the demand for imported watch. We use the following regression model:

$$\begin{aligned}
 V_{ift} = & \beta_1 L_{if} M_t + (\beta_2 + \beta_3 L_{if}) M_{ft} + \beta_4 L_{if} U_t + \alpha_f + \tau_t + \beta_5 \text{year94} * L_{if} \\
 & + \beta_6 \text{year98} * L_{if} + \beta_7 \text{taxit} + \gamma L_{if} + \delta L_{if} T_t + \epsilon_{ift} \quad (3)
 \end{aligned}$$

The dependent variable is still the log value of China’s watch import of good i from partner country f in year t . The first six terms are from the gravity equation (1). Unlike equation (1), we are not able to control for Chinese GDP and income inequality, M_t and U_t , since they are absorbed into year dummies τ_t . However, we can still allow for the interactions of these two terms with the luxury watch indicator L_{if} , in order to incorporate their specific effects on luxury watches. The last two terms L_{if} and $L_{if}T_t$ are from the DD equation (2). Again, we are not able to control for T_t , the dummy for leadership transition years, since it is also absorbed into the year dummies. The DD estimator of the “treatment effect” of leadership transitions on luxury watch imports is $\hat{\delta}$.

The year dummies τ_t control for all shocks along the time dimension. However, there are some shocks that have heterogeneous effects on luxury and non-luxury watch imports. The first type of this shock is the shift of quota regime in 1994. Watch imports were subject to quota restrictions before 2003.²⁹ Before 1994, quotas were allocated by local government. The anticipated change came in 1994, when it was decided that the allocation of import quotas were to be centralized in 1995.³⁰ Concerned that they might lose their licenses in 1995, local license holders exhausted their full quotas in 1994 and shifted imports to more expensive watches, resulting in a surge in the value of watch imports, as shown in Figure 3. In 1995, there was a subsequent fall in the value of luxury imports under the newly implemented centralized quota regime. The second type of this shock is the Asian financial crisis in 1998. As also shown in Figure 3, the financial crisis may be related to the sharp decrease in the imports of luxury watches in China, but it seems to have no effect on the imports of non-luxury watches. In order to incorporate these shocks specific to the demand for luxury watches, we add two interaction terms: the interaction between the year dummy of 1994 and the indicator of luxury watch, $year94 * L_{if}$, and the interaction $year98 * L_{if}$.

Various taxes also affect the demand for imported watches. The first type of tax is tariff. We extract tariff data of China from the WITS, derived from the United Nations Conference on Trade and Development Trade Analysis and Information System database. The data include year-end tariff for the ten categories of watches with a six-digit HS code. We use the MFN (most-favored-nation) applied tariff. Thus, given a product i and a year t , tariff

²⁹China eliminated watch import quota on January 1st, 2003, following the access to the WTO in the end of 2001. This quota regime change affects both luxury and non-luxury watch, and its effects are absorbed by the set of year fixed effects. Adding another interaction term between the year dummy of 2003 and L_{if} only slightly changes the results.

³⁰The new quota administration system was established by the *Interim Measures for Import Administration of Machinery and Electronics Products*, effective on January 1, 1994. The English version of this policy can be found here: <http://www.chinalawedu.com/news/23223/23228/23899.htm>. Under the new policy, all watch importers must submit import applications to the central government for approval by October 31 in the year before importing. The detailed implementing rules of the *Measures*, including the coverage of import commodities (in HS code), can be found here: http://www.law-lib.com/law/law_view.asp?id=57310.

does not vary across partner countries f .³¹ We ignore the value-added tax since it does not vary across different watches given a year, and any change over time is absorbed by the full set of year fixed effects. Starting on April 1st, 2006, China imposed a consumption tax of 20% on imported *valuable* watch that has an after-tariff-price of RMB10,000 (about \$1,250 on the 2006 exchange rate) or above.³² We add the 20% consumption tax rate to the tariff as a measure of the total tax burden, among the watches that are most likely to be taxed (HS code=9101XX, watches with a case of precious metal).³³ Thus, after tax measure tax_{it} is tariff plus the consumption tax.

[Table 7 about here]

The estimates of equation (3) are presented in Table 7. Without including any specific shocks and tax, column 1 estimates an augmented model that combines the gravity equation and a DD specification. The variables of the gravity equation behave consistently with in Table 3. The DD estimates $\hat{\delta}$, not surprisingly, are also close to the DD estimate with residuals in column 10 in Panel A of Table 4. The estimated $\hat{\delta}$ is still 1.1 log point, which translates to a surge of about 200% in luxury watch imports from non-transition years to transition years, compared to non-luxury watch imports. Consistent with Figure 3, column 2 shows that the effect of the quota shock in 1994 on luxury watches is significantly positive, and the effect of the financial crisis in 1998 is significantly negative. The tax is negatively related to imports, as expected. After controlling for these shocks and tax, the DD estimate $\hat{\delta}$ is even larger: 1.5 log point, or an increase of about 350% in luxury watch imports from non-transition years to transition years.

Since we use up to 18 years of data, we follow the suggestion from Bertrand et al. (2004) and estimate robust standard errors clustered at partner-product class (defined by four-digit HS code) level to allow for serial correlation within each cluster. The number of clusters is 22. An alternative way is to cluster at year (the number of clusters is 18), which allows for correlation across partners and products within a year. Or we can use two-way clustering both at year and at partner-product class to incorporate correlation at both time dimension and cross-section dimension (Cameron et al., 2011). These procedures of calculating standard errors yield qualitatively similar results, reported in Appendix Table

³¹In our Chinese tariff data, three years of tariff data are missing: 1995, 2002, and 2008. For these three years, we impute tariffs by using the simple average of the neighboring two years. For example, for the missing tariff of a product in 1995, we use the simple average of tariffs of the same product in 1994 and 1996.

³²The policy details and all taxable import goods can be found on the website of the General Administration of Customs of the People's Republic of China: <http://www.customs.gov.cn/publish/portal0/tab399/info22352.htm>.

³³In 2006, the average price (before tariff) of this *valuable* category was \$2,700, compared to the average price of \$24 of all other watches.

A1, by using the specification in column 1 of Table 7. In order to evaluate the potential bias caused by the small number of clusters, Table A1 also reports p-values calculated from the procedure of wild cluster bootstrap, which has been shown to perform well with a very small number of clusters (Cameron et al., 2008). The p-values related to the cluster at the level of partner–product class or at the level of year are small.

Columns 3 and 4 in Table 7 estimates equation (3) by using the import quantities in China. The data are available after 2000, which covers the last two transition cycles 2001-2002 and 2006-2007. We do not include $year94 * L_{if}$ and $year98 * L_{if}$ because they are not in the sample period. Since we use import quantity instead of nominal import value, we replace nominal GDP with real GDP. After adding tax, the DD estimates are very close to the estimates with import values, about 1.5 log points. The effect of tax on import quantity is larger than the effect on import value, which suggests that the tax-related decrease in imports concentrate on cheap watches. This is understandable since China is a large manufacturer of cheap watches and the domestic brands are quite popular in the market. However, China does not produce much expensive watches, which might explain the low price elasticity of the demand for imported expensive watches.³⁴

4.7 Tariff and Smuggling

Tariff and consumption tax, both collected by customs, could also affect measures of imported goods. It is possible that watches under higher tax rates are underreported or misclassified as watches under lower tax rate, for the purpose of tax evasion. To test whether the smuggling or “misreporting” of import watches vary systematically with tax, we follow the empirical framework in Fisman and Wei (2004) by comparing the import data reported by China and the export data reported by Hong Kong.³⁵ We use the following specification,

$$\log(\text{export})_{it} - \log(\text{import})_{it} = \beta_1 \text{tax}_{it} + \beta_2 \text{avgtax}_{-o_{it}} + \text{year}FE_t + \nu_{it} \quad (4)$$

³⁴Not all expensive watches are luxury, and the latter only includes some extremely expensive watches made by certain producers. Thus, the luxury watch indicator L_{if} is not able to control for all the heterogeneous effects of taxes on the demand for different watches. There is a wide range of expensive but non-luxury watches with a popular brand, such as Swatch from Switzerland and Seiko from Japan.

³⁵Another way to address the problem of misreported imports is to compare the import data with the export data reported by watch manufacturing countries. Unfortunately, it is difficult to do this in our case. A considerable amount of imports of China are indirect imports, e.g. imports from other countries via Hong Kong. Chinese import data aggregate all direct imports and re-imports under the original source country, but this difference is not reflected in the export data from the original source country. For example, the export data to China reported by Switzerland do not include all the trade flow of Swiss watches into China. A large amount of exports to Hong Kong reported by Switzerland finally enters China too. This problem is complicated since Hong Kong is not the only re-export hub in Asia (Singapore is another one). Hence, in measuring watches that finally flow to China, the export data from manufacturing countries are subject to potentially large measurement errors.

$\log(\text{export})_{it}$ is the watch category i in year t that are *direct* exports to China reported by Hong Kong, and $\log(\text{import})_{it}$ is the watch category i in year t that are imports from Hong Kong reported by China. In principle, these two measures should match, since China only reports what it considered to be direct imports from Hong Kong and all re-imports via Hong Kong are aggregated into the imports under the original source country. tax_{it} is tariff plus consumption tax. When the tax rate is high, the smuggling or under-reporting of imports is likely to be more prevalent in order to evade tax. If this is the case, the estimated $\hat{\beta}_1$ should be positive. In addition, given the tax rate of watch i , if the tax rate of a similar watch j is low, i is more likely to be misclassified as j in order to evade tax. For each i , we measure the tax rate of a similar watch by using the average tax rate of all other six-digit HS subcategories of watches under the same four-digit HS category, avgtax_{oit} . If misclassification exists, $\hat{\beta}_2$ should be negative. A set of year dummies yearFE_t controls for yearly common shocks. v_{it} is an error term.

[Table 8 about here]

Table 8 reports the estimates of equation (6). Since the number of cross-sectional observations is small relative to a long period of 18 years, we calculate Newey-West standard errors with a time lag of 2 years to correct standard errors for serial correlation (Newey and West, 1987). Columns 1 and 2 measure the trade gap in trade values, and columns 3 and 4 measure the gap in trade quantities. Columns 1 and 3 show that estimated $\hat{\beta}_1$ and $\hat{\beta}_2$ are neither economically nor statistically significant. In order to further test whether the effects of tax vary during the leadership transition years, columns 2 and 4 include two interaction terms: $\text{tax}_{it} * T_t$ and $\text{avgtax}_{oit} * T_t$. The coefficients of these two interaction terms are not significant either. These small effects are likely the results of small variation in tax rates across the ten 6-digit HS subcategories of watches within a year. These exercises suggest that the type of misreporting of imports emphasized in Fisman and Wei (2004) seems unlikely to bias our estimates.

4.8 Analysis with the Aggregate Data

As the final robustness check, we test whether our estimates are sensitive to missing observations. As we discussed in Section 3, given so many data cells (product*partner*year), it is not surprising that many observations are missing. Most of the missing observations occurred in early years when China had a more restrictive trade regime and a low average income. Instead of using 10 six-digit HS code products from 11 partner countries, we aggregate watches into only two categories: luxury and non-luxury. Multiplied by 18 years, we

have 36 observations in total, without any missing value. The aggregate data are exactly the same data shown in Figure 2. We use the following specification:

$$V_{it} = (\beta_1 + \beta_2 L_i)M_t + (\beta_3 + \beta_4 L_i)U_t + (\beta_5 + \beta_6 L_i)trend_t + \gamma_1 L_i + \gamma_2 T_t + \delta L_i T_t + \epsilon_{it} \quad (4)$$

The dependent variable is either annual total import value or quantity, and i here refers to either luxury or non-luxury watches. The independent variables are similar as in equation (3), and we also add a simple luxury-specific linear trend. We calculate Newey-West standard errors with a time lag of 2 years to correct standard errors for serial correlation (Newey and West, 1987). Columns 1-4 of Table 9 report the DD estimates $\hat{\delta}$, using import values. The coefficient in China is smaller than the main estimates but still large: around 0.6 log points, or an increase of about 80% in luxury watch imports from non-transition years to transition years. There are no such effects in other countries. Columns 5-8 repeat the estimation by using import quantities as the dependent variable. Even with only 22 observations (luxury or non-luxury*11 years), $\hat{\delta}$ in China is still statistically significant and large as 1 log point.

[Table 9 about here]

5 Conclusions

Enormous visible and invisible costs of political power transitions are not inherently unique to democratic elections and campaigns. During years of regular leadership transition and government personnel turnover in China, bribery and gift-sending is rampant. Expensive but inconspicuous, a luxury wrist watch emerges as a popular medium of corrupt exchanges and an ideal gift to officials. We find that during leadership transition years, the import value of luxury watches triples in China. This pattern does not exist in Hong Kong, Singapore, or the United States.

This paper highlights the link between corruption and the booming market of luxury goods in China. This link can be further investigated in the future research in at least three ways. First, by exploiting the timing of local leadership transitions with data from local customs, future research could extend our analysis to provinces and cities. The results could measure the level of corruption across Chinese regions. Second, luxury watches are not the only popular luxury goods that are used as a medium of corrupt transactions. Other examples are gold coins and gold bars, and it is possible to collect sales data on these items from Chinese banks. Third, leadership transitions are not the only source of exogenous changes in the demand for luxury goods in China. Anecdotal evidence suggests that immediately after coal mine disasters, the owners of coal mines send luxury gifts to

officials in order to cover up the disasters. Future research along these lines will improve our understanding of both Chinese consumption of luxury goods and patterns of corruption.

References

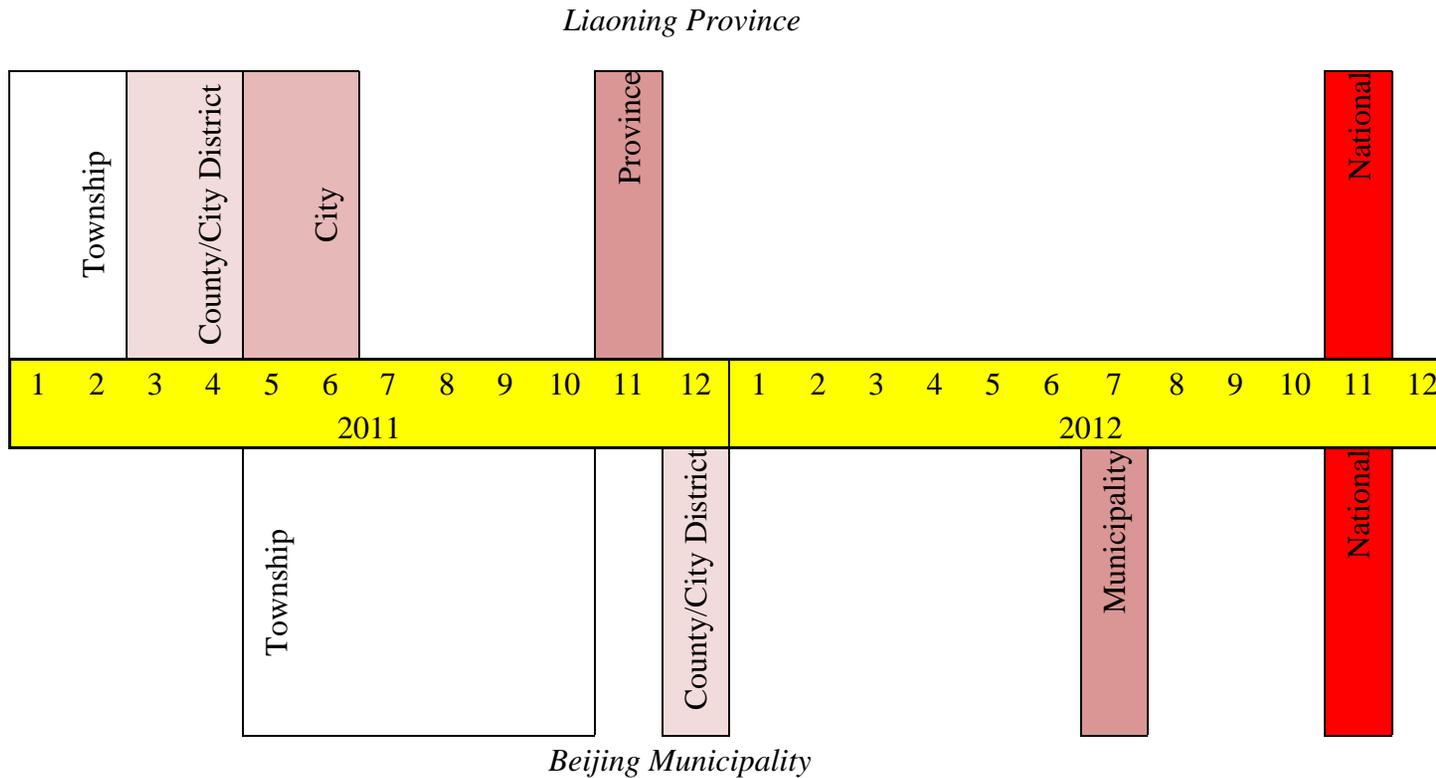
- Akhmedov, Akhmed and Ekaterina Zhuravskaya (2004), ‘Opportunistic political cycles: test in a young democracy setting’, *The Quarterly Journal of Economics* **119**(4), 1301–1338.
- Anderson, James E. (2011), ‘The gravity model’, *Annual Review of Economics* **3**, 133–160.
- BainCompany (2012), 2012 china luxury study.
- Banerjee, Abhijit, Sendhil Mullainathan and Rema Hanna (2012), ‘Corruption’, *NBER Working Papers* **17968**.
- Bertrand, Marianne, Esther Duflo and Sendhil Mullainathan (2004), ‘How much should we trust differences-in-differences estimates?’, *The Quarterly Journal of Economics* **119**(1), 249–275.
- Bertrand, Marianne, Francis Kramarz, Antoinette Schoar and David Thesmar (2006), ‘Politicians, firms and the political business cycle: evidence from france’, *Unpublished working paper. University of Chicago* .
- Cameron, A Colin, Jonah B Gelbach and Douglas L Miller (2008), ‘Bootstrap-based improvements for inference with clustered errors’, *The Review of Economics and Statistics* **90**(3), 414–427.
- Cameron, Colin A., John B. Gelbach and Douglas L. Miller (2011), ‘Robust inference with multiway clustering’, *Journal of Business & Economic Statistics* **29**(2), 238–249.
- Chan, Hon S. (2004), ‘Cadre personnel management in China: The nomenklatura system, 1990–1998’, *China Quarterly* **179**, 703–734.
- Charles, Kerwin Kofi, Erik Hurst and Nikolai Roussanov (2009), ‘Conspicuous consumption and race’, *The Quarterly Journal of Economics* **124**(2), 425–467.
- Faccio, Mara (2006), ‘Politically connected firms’, *The American Economic Review* **96**(1), 369–386.
- Ferguson, Thomas and Hans-Joachim Voth (2008), ‘Betting on Hitler: the value of political connections in Nazi Germany’, *The Quarterly Journal of Economics* **123**(1), 101–137.

- Fisman, Raymond (2001), 'Estimating the value of political connections', *American Economic Review* **91**(4), 1095–1102.
- Fisman, Raymond and Shangjin Wei (2004), 'Tax rates and tax evasion: Evidence from "Missing Imports" in China', *Journal of Political Economy* **112**(2), 471.
- Gingerich, Daniel (2010), 'Dividing the dirty dollar: The allocation and impact of illicit campaign funds in a gubernatorial contest in Brazil', *Unpublished manuscript, University of Virginia* .
- Golden, Miriam and Brian Min (2013), 'Distributive politics around the world', *Annual Review of Political Science* **16**, 73–99.
- Gong, Ting and Muluan Wu (2012), 'A report on China's corruption from 2000 to 2009: an analysis of over 2000 reported cases', *Sociology Research* **4**, 204–220.
- Gordon, Roger H and Wei Li (2005), Taxation and economic growth in China, *in* Y.K.Kwan and E.S.H.Yu, eds, 'Critical Issues in China's Growth and Development', City University of Hong Kong, Ashgate.
- Gordon, Roger H and Wei Li (2011), 'Provincial and local governments in china: Fiscal institutions and government behavior'.
- Harstad, Bard and Jakob Svensson (2011), 'Bribes, lobbying and development', *American Political Science Review* **105**(1), 46–63.
- Head, Keith and Thierry Mayer (2013), Gravity equations: Workhorse, toolkit, and cookbook, *in* Gopinath, Helpman and Rogoff, eds, 'Handbook of International Economics Vol. 4', Elsevier.
- Heffetz, Ori (2011), 'A test of conspicuous consumption: Visibility and income elasticities', *Review of Economics and Statistics* **93**(4), 1101–1117.
- Heston, Alan, Robert Summers and Bettina Aten (2011), 'Penn world table v7.0', *Center for International Comparisons at the University of Pennsylvania* .
- Huang, Hsin-Haoi (2008), Limited Renewal: Political Elite Mobility in Chinese Party-State, 1978-2008, PhD thesis, National Chengchi University.
- Jia, Ruixue and Xiaohuan Lan (2013), 'Red capitalism: Cadre parents and entrepreneurial children in China', *Unpublished manuscript, Cheung Kong GSB* .

- Kapur, Devesh and Milan Vaishnav (2011), ‘Quid pro quo: Builders, politicians, and election finance in india’, *Center for Global Development Working Paper* **276**.
- Kaufmann, Daniel, Aart Kraay and Massimo Mastruzzi (2010), ‘The worldwide governance indicators: methodology and analytical issues’, *World Bank Policy Research Working Paper* (5430).
- Khwaja, Asim Ijaz and Atif Mian (2005), ‘Do lenders favor politically connected firms? rent provision in an emerging financial market’, *The Quarterly Journal of Economics* **120**(4), 1371–1411.
- Landry, Pierre F. i (2000), Controlling decentralization: The Party and local elites in post-Mao Jiangsu (China), PhD thesis, University of Michigan.
- Lau, Lawrence J, Yingyi Qian and Gerard Roland (2000), ‘Reform without losers: an interpretation of china’s dual-track approach to transition’, *Journal of Political Economy* **108**(1), 120–143.
- Lawrence, Susan.V. and Michael F. Martin (2012), Understanding China’s political system, CRS Report for Congress R41007, Congressional Research Service.
- Li, Hongbin and Li-An Zhou (2005), ‘Political turnover and economic performance: the incentive role of personnel control in China’, *Journal of public economics* **89**(9), 1743–1762.
- Li, Hongbin, Lingsheng Meng, Qian Wang and Li-An Zhou (2008), ‘Political connections, financing and firm performance: Evidence from Chinese private firms’, *Journal of Development Economics* **87**(2), 283–299.
- Li, Ling (2011), ‘Performing bribery in China: guanxi-practice, corruption with a human face’, *Journal of Contemporary China* **20**(68), 1–20.
- Li, Wei (1999), ‘A tale of two reforms’, *The RAND Journal of Economics* pp. 120–136.
- Martinez-Bravo, Monica, Gerard Padro Miquel, Nancy Qian and Yang Yao (2012), ‘The effects of democratization on public goods and redistribution: Evidence from china’, *NBER Working Paper 18101*.
- Newey, Whitney K. and Kenneth D. West (1987), ‘A simple, positive semi-definite, heteroskedasticity and autocorrelation consistent covariance matrix’, *Econometrica* **55**(3), 703–08.

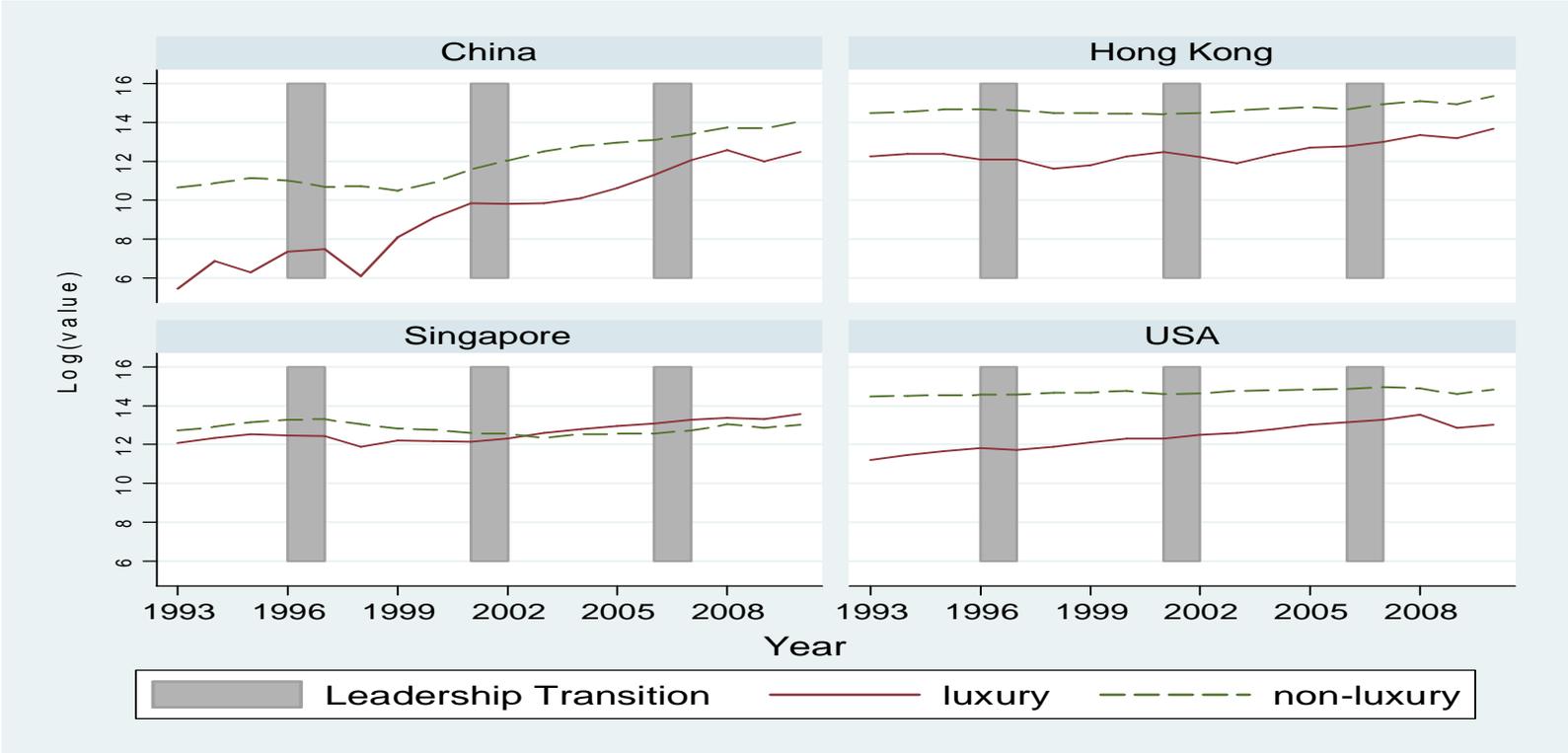
- Olken, Benjamin A and Rohini Pande (2012), ‘Corruption in developing countries’, *Annual Review of Economics* **4**(1), 479–509.
- Sequeira, Sandra (2012), ‘Advances in measuring corruption in the field’, *Unpublished manuscript, London School of Economics* .
- Shleifer, Andrei and Robert W Vishny (1993), ‘Corruption’, *The Quarterly Journal of Economics* **108**(3), 599–617.
- Shleifer, Andrei and Robert W Vishny (1994), ‘Politicians and firms’, *The Quarterly Journal of Economics* **109**(4), 995–1025.
- Sukhtankar, Sandip (2012), ‘Sweetening the deal? political connections and sugar mills in India’, *American Economic Journal: Applied Economics* **4**(3), 43–63.
- Svensson, Jacob (2005), ‘Eight questions about corruption’, *The Journal of Economic Perspectives* **19**(3), 19–42.
- Tu, Qian (2011), ‘An empirical research on corrupted province leaders: Evidence from 72 cases since the 16th National Congress of the Communist Party of China’, *Political Research Report of Contemporary China* **015**.

Figure 1: Timeline of the 2011-2012 Congress of the Communist Party of China



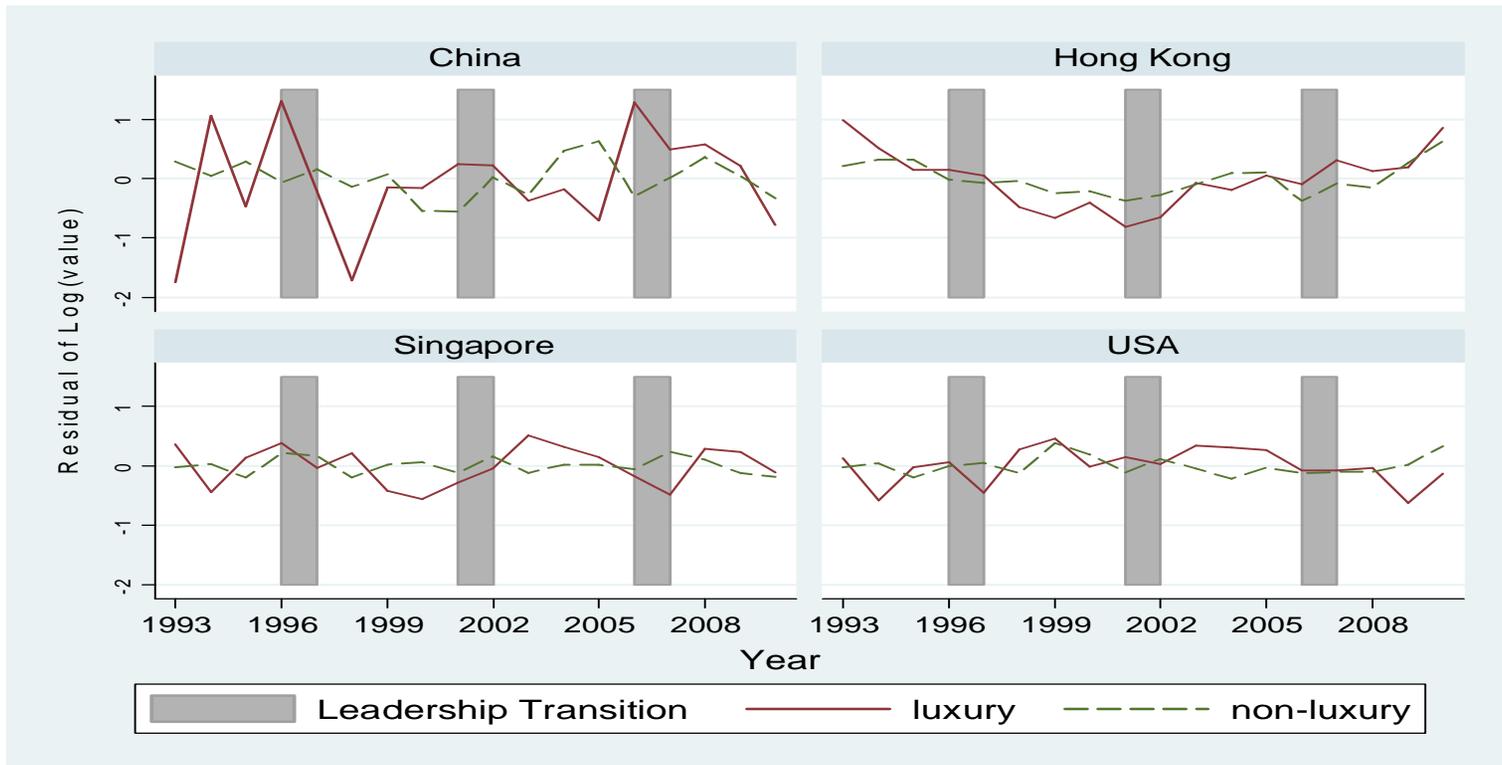
This figure shows the timelines of the 12th Congress of the Communist Party of China in Liaoning province and Beijing municipality. In Liaoning, the congress started in January 2011 at the township level and ended 10 month later at the provincial level in the provincial capital city Shenyang. Liaoning was the first province to complete the 12th CCP Congress at the subnational levels. In Beijing, the congress started in May 2011 at the township level and ended in July 2012. Beijing was the last provincial level division to complete the 12th CCP Congress at subnational levels. The National Congress was held in November 2012

Figure 2: Trend of Log (Value) of Total Watch Import



Source: United Nations Commodity Trade Statistics Database

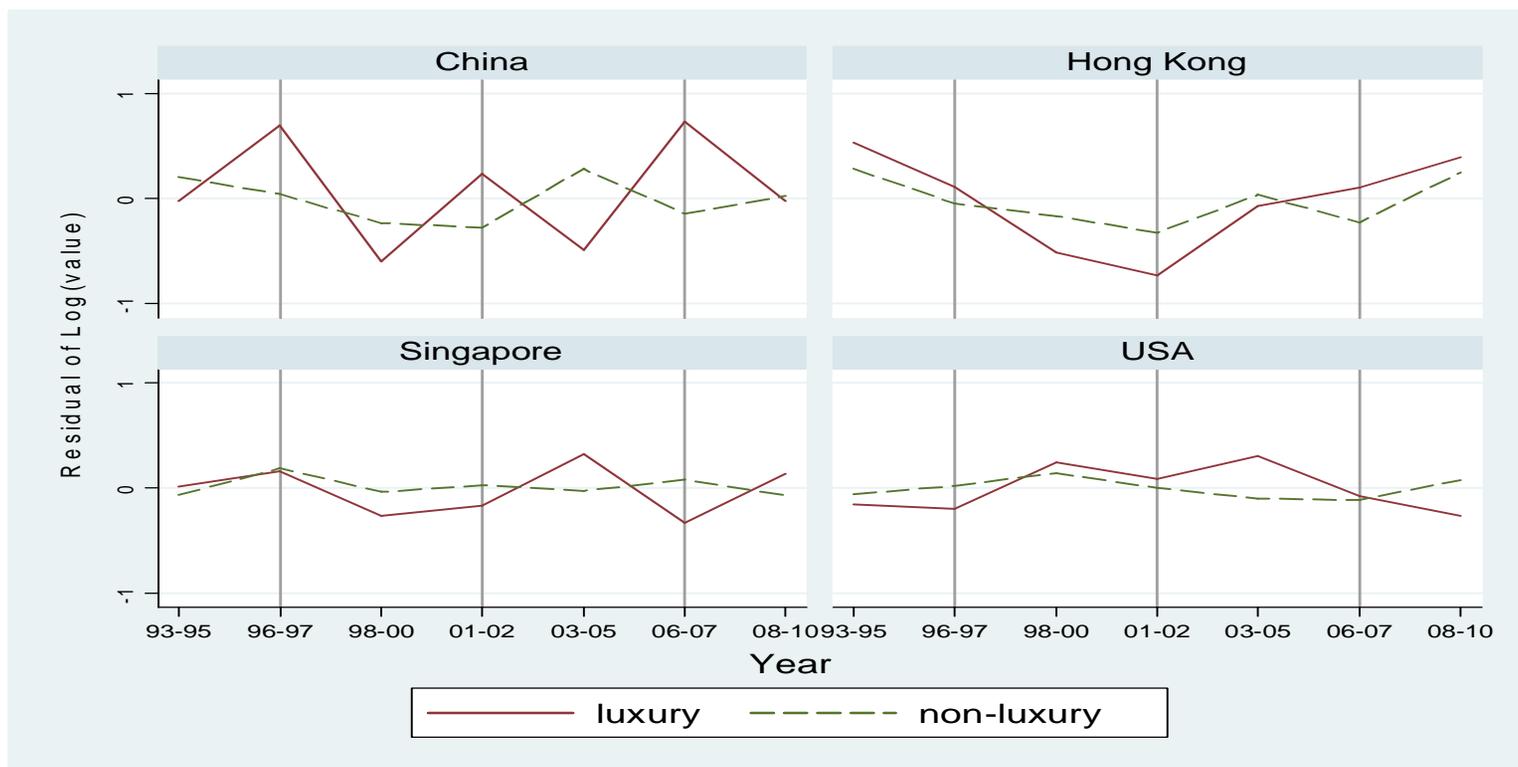
Figure 3: Residual of Log (Value) of Watch Import from the Gravity Equation



The data are detrended by using the gravity equation, as specified in Table 3.

Source: United Nations Commodity Trade Statistics Database

Figure 4: Residual of Log (Value) of Watch Import from the Gravity Equation, Average around Leadership Transitions



The data are detrended by using the gravity equation, as specified in Table 3.

Source: United Nations Commodity Trade Statistics Database

Table 1: HS Code and Product Descriptions of Imported Watch

HS CODE	Product Description	Luxury
910111	Wrist-watches, with case of precious metal or of metal clad with precious metal, electrically operated, with mechanical display only	no
910112	Wrist-watches, with case of precious metal or of metal clad with precious metal, electrically operated, with optoelectronic display only	no
910119	Wrist-watches with display, electrically operated, with cases of precious metal or of metal clad with precious metal, not either specified or included	no
910121	Wrist-watches, with case of precious metal or of metal clad with precious metal, with automatic winding	yes if made in specific countries†
910129	Wrist-watches, with case of precious metal or of metal clad with precious metal, other than those electrically operated or with automatic winding	yes if made in specific countries†
910211	Wrist-watches, other than those with case of precious metal or of metal clad with precious metal, electrically operated, with mechanical display only	no
910212	Wrist-watches, other than those with case of precious metal or of metal clad with precious metal, electrically operated, with optoelectronic display only	no
910219	Wrist-watches, other than those with case of precious metal or of metal clad with precious metal, electrically operated, not either specified or included	no
910221	Wrist-watches, other than those with case of precious metal or of metal clad with precious metal, with automatic winding	no
910229	Wrist-watches, other than those with case of precious metal or of metal clad with precious metal, other than those electrically operated or with automatic winding	no

†Specific countries include France, Germany, Italy, Switzerland, and the U.S.

Table 2: Summary Statistics

	China (1)	Hong Kong (2)	Singapore (3)	U.S. (4)
log(value) of luxury watch† (standard deviation)	6.228 (3.397)	8.117 (2.300)	7.262 (2.746)	8.084 (2.328)
Residual log(value) of luxury watch	0 (1.802)	0 (1.544)	0 (1.226)	0 (1.035)
n	69	174	174	144
log(value) of non-luxury watch	3.718 (3.856)	7.326 (2.829)	5.929 (2.617)	6.462 (3.000)
Residual log(value) of non-luxury watch	0 (3.328)	0 (2.609)	0 (1.822)	0 (2.707)
n	994	1,359	1,622	1,658
log(quantity) of luxury watch††	5.358 (3.328)	6.339 (2.322)	7.593 (2.609)	8.141 (2.131)
n	51	108	110	80
log(quantity) of non-luxury watch	6.906 (4.033)	8.796 (4.022)	8.431 (3.252)	10.101 (3.962)
n	663	852	1015	913
median unit price of luxury watch \$	5589.7	6792.8	992.2	1486.4
median unit price of non-lux watch \$	44.2	198.9	67.5	19.0
Log(GDP)	14.30 (0.71)	12.05 (0.16)	11.61 (0.37)	16.15 (0.26)
Log(GDP 1993)	13.37	11.69	11.01	15.70
Log(GDP 2010)	15.58	12.32	12.32	16.49
Income Inequality†††	8.16 (1.67)	17.67 (2.28)	10.82 (1.57)	14.22 (0.61)
Income Inequality (1993)	5.88	14.04	8.38	13.58
Income Inequality (2010)	10.08	21.15	12.60	15.38

† in 1,000 U.S. dollars

††The data are available from 2000 to 2010. The data in 2008 in the U.S. are missing.

††† The ratio of income share of the top 20% income earners to the bottom 20%

Source: United Nations Commodity Trade Statistics Database, Penn World Table, World Develop Indicators, U.S. Census Bureau, Hong Kong Census and Statistics Department, Singapore Department of Statistics.

Table 3: The Gravity Equation, log (import values of watch), 1993-2010

	China (1)	Hong Kong (2)	Singapore (3)	U.S. (4)
luxury	-9.165 (10.785)	23.439 (20.071)	1.297 (4.975)	-37.265*** (12.846)
Log(GDP)	1.780*** (0.402)	1.211 (0.967)	1.107*** (0.264)	1.478** (0.692)
Luxury*log(GDP)	1.021 (0.921)	-1.735 (1.822)	0.086 (0.527)	2.856** (1.157)
inequality	-0.491*** (0.175)	-0.048 (0.068)	-0.114* (0.063)	-0.392 (0.294)
Luxury*inequality	0.553 (0.431)	0.296** (0.129)	0.377*** (0.135)	-0.227 (0.459)
Log(partner GDP)	-0.041 (0.191)	0.026 (0.073)	0.064 (0.051)	0.111 (0.083)
Luxury*log(partner GDP)	-0.656** (0.266)	-0.471*** (0.130)	-0.317*** (0.083)	-0.285 (0.179)
constant	-14.281*** (4.711)	-4.889 (10.780)	-3.260 (2.528)	-10.342 (7.602)
F-statistics of partner fixed effects	41.46***	23.93***	154.78***	37.76***
R-squared	0.297	0.187	0.527	0.233
F-statistics	65.85***	29.20***	164.6***	102.5***
n	1,063	1,533	1,796	1,802

Robust standard errors are in parenthesis.

Table 4: Difference-in-Differences Estimates, Residual of log(import values of watch), Luxury v.s.Non-luxury

	First Transition: 1993-2000			Second Transition: 1998-2005			Third Transition: 2003-2010			All years
	1993-97	1996-00	1993-00	1998-02	2001-05	1998-05	2003-07	2006-10	2003-10	1993-10
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: China										
Transition*luxury	0.878	1.484	1.071	0.959**	1.517**	1.281**	1.361*	0.664	1.011**	1.068**
	(0.883)	(1.588)	(1.141)	(0.454)	(0.620)	(0.533)	(0.701)	(0.675)	(0.376)	(0.508)
Observations	120	129	191	138	147	218	166	168	248	506
Panel B: Hong Kong										
Transition*luxury	-0.013	0.557**	0.266	0.164	-0.345	-0.090	0.360*	0.289	0.326*	0.119
	(0.296)	(0.232)	(0.160)	(0.312)	(0.359)	(0.281)	(0.206)	(0.338)	(0.174)	(0.105)
Observations	170	174	259	180	184	273	185	186	279	629
Panel C: Singapore										
Transition*luxury	-0.195	0.392	0.100	0.212	-0.585	-0.186	-0.671**	-0.585*	-0.625**	-0.278**
	(0.412)	(0.295)	(0.204)	(0.692)	(0.377)	(0.437)	(0.252)	(0.326)	(0.263)	(0.101)
Observations	207	211	315	218	220	328	218	207	317	742
Panel D: USA										
Transition*luxury	-0.218	-0.398	-0.307**	-0.047	-0.357	-0.202	-0.243	0.495**	0.121	-0.053
	(0.227)	(0.279)	(0.144)	(0.169)	(0.250)	(0.150)	(0.166)	(0.202)	(0.147)	(0.096)
Observations	212	214	321	216	216	325	214	203	312	740

The dependent variable is the residuals obtained from the gravity equation in Table 3. All regressions include a dummy of transitional period, a dummy of luxury watch, and a constant. Standard errors are clustered at product class and partner country level.

Table 5: Difference-in-Differences Estimates, Residual of log(import values of watch)

	First Transition: 1993-2000		Second Transition: 1998-2005			Third Transition: 2003-2010			All years	
	1993-97	1996-00	1993-00	1998-02	2001-05	1998-05	2003-07	2006-10	2003-10	1993-10
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: China and Hong Kong, Luxury Watch										
Transition*China	1.050 (0.887)	1.217 (1.769)	1.047 (1.195)	0.862** (0.323)	1.584** (0.669)	1.260** (0.501)	0.958 (0.688)	0.996 (0.732)	0.977** (0.335)	1.136* (0.528)
Observations	27	26	40	25	30	43	35	35	53	105
Panel B: China and Singapore, Luxury Watch										
Transition*China	0.560 (0.956)	1.330 (1.786)	0.859 (1.211)	0.446 (0.688)	1.493** (0.600)	1.007* (0.534)	1.866** (0.734)	1.175 (0.729)	1.521*** (0.422)	1.059* (0.522)
Observations	27	26	40	25	30	43	35	35	53	105
Panel C: China and the U.S., Luxury Watch										
Transition*China	0.779 (0.890)	2.385 (1.838)	1.496 (1.218)	0.995*** (0.125)	1.223* (0.631)	1.146** (0.455)	1.599* (0.696)	0.527 (0.689)	1.063** (0.335)	1.063* (0.532)
Observations	23	22	34	21	26	37	31	31	47	91
Panel D: China and Hong Kong, Regular Watch										
Transition*China	0.159 (0.350)	0.290 (0.432)	0.242 (0.327)	0.067 (0.460)	-0.279 (0.286)	-0.111 (0.321)	-0.043 (0.305)	0.622 (0.432)	0.292 (0.307)	0.187 (0.174)
Observations	263	277	410	293	301	448	316	319	474	1,030
Panel E: China and Singapore, Regular Watch										
Transition*China	-0.513 (0.386)	0.238 (0.440)	-0.112 (0.346)	-0.301 (0.506)	-0.609 (0.411)	-0.460 (0.398)	-0.166 (0.289)	-0.074 (0.443)	-0.115 (0.295)	-0.287 (0.185)
Observations	300	314	466	331	337	503	349	340	512	1,143
Panel F: China and the U.S., Regular Watch										
Transition*China	-0.317 (0.334)	0.503 (0.422)	0.118 (0.320)	-0.011 (0.465)	-0.651** (0.268)	-0.336 (0.301)	-0.004 (0.283)	0.357 (0.437)	0.173 (0.300)	-0.058 (0.168)
Observations	309	321	478	333	337	506	349	340	513	1,155

The dependent variable is the residuals obtained from the gravity equation in Table 3. All regressions include a dummy of transitional period, a dummy of China, and a constant. Standard errors are clustered at reporter country and partner country level.

Table 6: Triple-differences Estimates, Residual of Log (import value), 1993-2010

	China and Hong Kong (1)	China and Singapore (2)	China and the U.S. (3)
Panel A: luxury watch and non-luxury watch			
Luxury watch*China*transition	0.949*	1.346**	1.122**
	(0.513)	(0.512)	(0.511)
n	1,135	1,248	1,246
Panel B: luxury watch and jewelry			
Luxury watch*China*transition	1.428**	1.057*	1.321**
	(0.570)	(0.563)	(0.562)
n	504	541	527
Panel C: luxury watch and handbag			
Luxury watch*China*transition	1.627**	1.750**	1.901***
	(0.688)	(0.680)	(0.682)
n	549	560	544
Panel D: luxury watch and car			
Luxury watch*China*transition	1.386**	1.709***	1.492**
	(0.557)	(0.585)	(0.558)
n	560	557	536

The dependent variable is the residuals obtained from the gravity equation in Table 3, and the control commodities are not non-luxury watch but other commodities specified in panels B-D. All regressions include a dummy of transitional period, a dummy of luxury watch, a dummy of China, and all their pairwise interactions. Standard errors are clustered at reporter country-product class-partner country level.

Table 7: Difference-in-Differences Estimates in Watch Imports in China, with Quota and Tax

	Log(value), 1993-2010		Log(quantity), 2000-2010	
	(1)	(2)	(3)	(4)
Luxury*transition	1.105** (0.490)	1.492** (0.579)	0.649** (0.306)	1.549*** (0.361)
tariff+consumption tax		-0.045* (0.022)		-0.189*** (0.034)
Luxury*1994		1.811*** (0.631)		
Luxury*1998		-0.945* (0.542)		
luxury	-14.484 (15.188)	-28.287 (16.559)	-30.395 (18.921)	-123.202*** (26.918)
Luxury*log(GDP)	1.488 (1.231)	2.624* (1.308)	3.148** (1.410)	9.784*** (1.943)
Luxury*inequality	0.370 (0.627)	0.182 (0.583)	-0.413 (0.460)	-1.521** (0.574)
log(partner GDP)	-0.089 (0.068)	-0.103 (0.069)	-3.868 (2.778)	-2.968 (3.598)
Luxury*log(partner GDP)	-0.673*** (0.207)	-0.754*** (0.185)	-1.173** (0.464)	-1.139*** (0.313)
Year fixed effects	yes	yes	yes	yes
partner fixed effects	yes	yes	yes	yes
n	1,063	1,063	714	714

We use nominal GDP in columns 1-2 and real GDP in columns 3-4. Standard errors are clustered at product class and partner country level.

Table 8: Tax and the Gap between Exports and Imports, China and Hong Kong

	Log(value gap), 1993-2010		Log(quantity gap), 2000-2010	
	(1)	(2)	(3)	(4)
tax	0.040 (0.039)	0.035 (0.061)	0.027 (0.131)	-0.050 (0.131)
tax*transition		0.011 (0.060)		0.266 (0.235)
tax on similar products	0.059 (0.040)	0.042 (0.068)	0.212 (0.131)	0.283* (0.143)
tax on similar products*transition		0.029 (0.084)		-0.241 (0.229)
n	114	114	71	71

All regressions include year dummies. Standard errors are Newey-West errors with a time lag of 2 years.

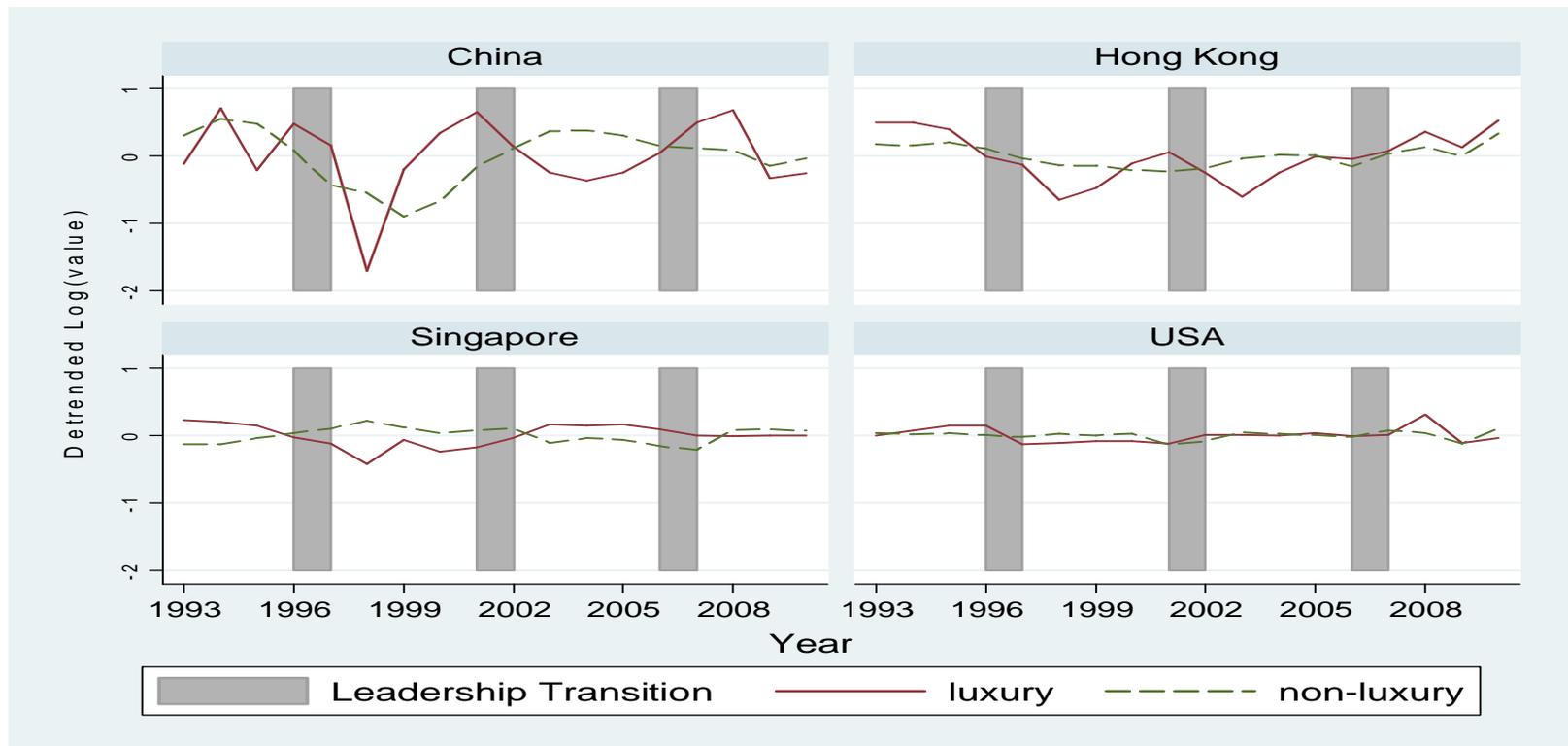
Table 9: Difference-in-Differences Estimates with Aggregate Data of Watch Imports

	Log(value), 1993-2010				Log(quantity), 2000-2010			
	China (1)	Hong Kong (2)	Singapore (3)	U.S. (4)	China (5)	Hong Kong (6)	Singapore (7)	U.S. † (8)
Luxury*transition	0.532** (0.223)	0.134 (0.179)	-0.246* (0.120)	0.023 (0.064)	1.003** (0.445)	0.262 (0.205)	-0.346 (0.264)	0.093** (0.040)
n	36	36	36	36	22	22	22	20

†The quantity data in 2008 are missing in the U.S.

All regression includes a dummy of luxury watch and a dummy of transition years, log (GDP) and its interaction with the luxury dummy, inequality and its interaction with the luxury dummy, and a linear trend and its interaction with the luxury dummy. We use nominal GDP in columns 1-4 and real GDP in columns 5-8. Standard errors are Newey-West HAC with a time lag of two years.

Appendix Figure A1: Detrended Log (Value) of Total Watch Import



The data are detrended from the log of the total value of watch imports shown in Figure 2, by using a linear trend and GDP of reporters.

Source: United Nations Commodity Trade Statistics Database

Appendix Table A1: Standard Errors in Difference-in-Differences Estimate, log (import values of watch) in China, 1993-2010

	Huber-White	Newey-West (lag=17)	one way cluster at partner country	one-way cluster at partner and product-class	one-way cluster at year	two-way cluster at product-class and year
luxury*transition	1.105** (0.535)	1.105** (0.461)	1.105* (0.510)	1.105** (0.490)	1.105*** (0.357)	1.105** (0.429)
number of clusters			11	22	18	22 and 18
p-value from wild cluster bootstrap			0.157	0.078	0.000	

All regressions use the same specification as in column 1 in Table 7.