

Social Mobility in Japan, 1868-2012: The Surprising Persistence of the Samurai

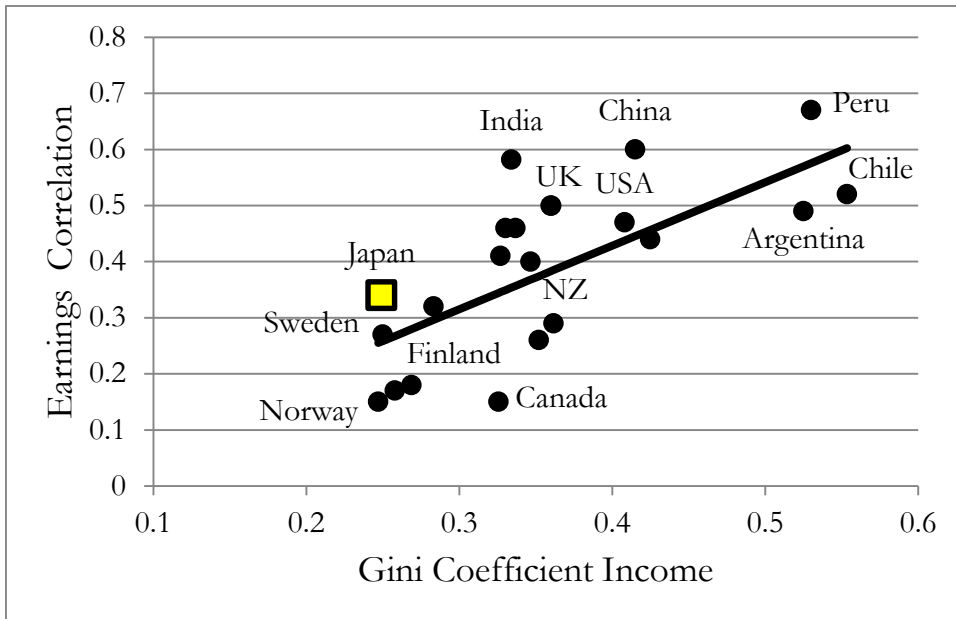
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Using rare surnames to track the descendants of two formerly elite groups in Japan – the Samurai, and the Kazoku of 1869-1946 – we estimate social mobility rates in Japan 1900-2012. We would expect that the dramatic social changes of Meiji Japan 1868-1946, and postwar Japan 1946-2012, would create substantial social mobility. However, we find high rates of persistence of the descendants of the former elites – in particular the Samurai - across a wide range of modern social elites: business, education, medicine and law. Social mobility rates are comparably slow, or even slower, than those found in similar studies for the USA, UK, and Sweden. True social mobility rates are everywhere much lower than conventionally estimated.

Conventional social mobility studies suggest that modern Japan is a mobile and meritocratic society. Two important regime changes, in 1868 and 1946-7, transformed Japan from a pre-industrial society of rigid class divisions, into a seemingly egalitarian and classless society. This impression is confirmed by the recent international survey of intergenerational earnings correlations versus income Gini coefficients by Miles Corak, summarized in figure 1. Japan appears to have both low income inequality, and a relatively low intergenerational correlation of earnings.

Sociological studies of mobility confirm this impression. For example, Saburo Yasuda reports Japan in the 1950s to have an intermediate degree of occupational mobility: lower than England and Wales, Sweden and the USA, but higher than West Germany and France (Yasuda, 1964, 17-20). A more recent study, comparing

Figure 1: Recent Intergenerational Earnings Correlations by Country



Source: Corak, 2012, Figure 2. Coefficient for Canada, personal communication.

occupational mobility for Japan and Australia for 1965, 1975, and 1985, again implies relatively high mobility rates (Jones, Kojima and Marks, 1985). Jones, Kojima and Marks look at ten occupational origins and destinations for father-son pairs in each cohort. If we assign each of these occupations an income level, then we can estimate a b coefficient, the intergenerational correlation of earnings, similar to the one displayed in figure 1. Using average income by occupation from the *Japan Statistical Yearbook* gives implied b s of 0.28 for 1965, 0.34 for 1975 and 0.31 for 1985.¹ These occupational mobility rates are comparable to those of Britain in the 1970s, similarly estimated (Long, 2013, ---).

¹ Imputed earnings for each occupational category were calculated as the employment weighted average of earnings in all occupations falling within that category. Absent other evidence the earnings for the occupational category “self-employed farm” were taken to be those of “semi-skilled employees” and those of “farm employee” taken to be those of “unskilled employees” respectively. Since the major differences in imputed earnings were between the top 3 occupational categories (Professional, Managerial and Clerical) and the 5 lower categories this approximation should not have too much effect on the calculated b s. The 1965 earnings by occupation were estimated from those of 1975.

The Meiji era has also been reported to be one of substantial social mobility. In 1871 the government ordered all samurai to turn in their swords, made commoners free to intermarry with samurai, and allowed samurai to pursue any occupation. A new education system was launched in 1872, which was premised on selection for higher level institutions through examination alone. Ikuo Amano reports, for example, that while in the new universities and technical colleges the descendants of the samurai class were initially heavily overrepresented, the proportion of those of commoner origin rose quickly. Thus table 1 shows the shares of samurai and commoners in various higher education institutions in 1890 and 1900. Since the descendants of the *samurai* were 5.3% of the population in the early Meiji era, in 1890 the samurai were graduating at 12 times the expected rate in Imperial Universities, and commoners at less than half the expected rate.² But by 1900, ten years later, the samurai graduates were less than 9 times above the expected rate.

The preceding studies seem to indicate that we should find high rates of social mobility in Japan all the way since 1868. In particular if we look at Japan now, nearly 5 generations since the Meiji Restoration, we should expect little trace of the formerly elite status of the Samurai in their descendants. If the b linking generations is 0.33, and the process is Markov, then the b linking income or status over 5 generations would be 0.004, so that there would be no discernible effect of Samurai ancestry in the status of people in the current generation.

However, in this paper, using rare surnames to identify former elite groups, we will show that Japanese social mobility rates 1868-2012 have been significantly lower than conventionally estimated. The descendants of the Samurai, and of the Kazoku, the Meiji peerage, remain an elite even now. We then explain why these lower social mobility rates estimated from surnames indicate the true underlying social mobility rates in Japan, and reflect just an international phenomena of much lower social mobility than is conventionally estimated.

² Amano, 1990, 192. The Samurai share is from 1881 (Soroda, 1990, 103).

Table 1: Class Composition of University Graduates, 1890-1900

	1890		1900	
	Samurai	Commoners	Samurai	Commoners
Imperial Universities	63	37	51	49
Higher schools	62	38	48	42
National Government Professional Schools				
Medicine	35	65	27	73
Commerce	49	51	43	57
Engineering	71	29	56	44
Agriculture	48	52	29	71
Local Government Professional Schools				
Medicine	28	72	24	76
Private Professional Schools				
Medicine	27	73	25	74
Law	28	72	34	66
Liberal Arts & Sciences	60	40	35	65

Source: Amano, 1990, 193.

Estimating b from Surnames

The method we employ to measure social mobility is to identify rare surnames associated with the descendants of two earlier elites, the *samurai*, and the much smaller *Kazoku*, the newly created nobility of Meiji Japan. We measure social mobility 1900-2012 by the rate at which these surnames show a decline in overrepresentation among various elite groups in Japan: doctors, attorneys, university

faculty, senior managers in business. This rate of decline can be used to measure an implied b , the persistence rate between generations.

We assume in this paper that if x_t measures the social status of families in generation t then

$$x_{t+1} = bx_t + e_t$$

where x_t and x_{t+1} are assumed to have a mean of 0, and a constant variance σ^2 , and x_t is normally distributed. However, we typically do not directly observe the complete social status of families, but some partial measure, y_t , where such measures would be earnings, wealth, years of education, educational status, or occupational status. For each generation t

$$y_t = x_t + u_t$$

where u_t is a random component linking the underlying status of the family to the particular observed measure of status. This implies that the conventional studies of social mobility, based on estimating the β in the relationship

$$y_{t+1} = \beta y_t + v_t$$

will underestimate the true b linking social mobility across generations. In particular the expected value of β will be

$$E(\beta) = b \frac{\sigma_x^2}{\sigma_x^2 + \sigma_u^2}$$

Thus conventional estimates of social mobility, based as they are on one generation studies, and on partial measures of overall social status, will systematically tend to overestimate underlying social mobility rates. This is because there is a correlation between the observed y and the error term that connects it to the underlying x .

The surname measures that are used here are estimates of the underlying b , even when they are based on observations on partial measures of social status, y . This is because the surnames were pre-selected as being rare surnames of the *Samurai* or *Kazoku*. When we look at what is happening to the status of these surnames on average in the modern era, even though we can only observe partial measures, y , of

the underlying social status x , these measures for the surname grouping will give unbiased estimates of the movement of underlying social status.

To extract implied b s we proceed as follows. Define the *relative representation* of each surname or surname type, z , in an elite group such as doctors as

$$\text{relative representation of } z = \frac{\text{Share of } z \text{ in elite group}}{\text{Share of } z \text{ in general population}}$$

With social mobility any surname which in an initial period has a relative representation differing from 1 should tend towards 1, and the rate at which it tends to 1 is determined by the rate of social mobility.

The overrepresentation of the surname in this elite could be produced by a range of values for the initial mean status, \bar{y}_{z0} , and the initial variance of status, σ_{z0}^2 , for this surname. But for any assumption about $(\bar{y}_{z0}, \sigma_{z0}^2)$ there will be an implied path of relative representation of the surname over generations for each possible b . This is because $\bar{y}_{zt} = \bar{y}_{z0}b^t$

$$\text{Also since } \sigma_{zt}^2 = b^2\sigma_{zt-1}^2 + (1 - b^2)\sigma^2,$$

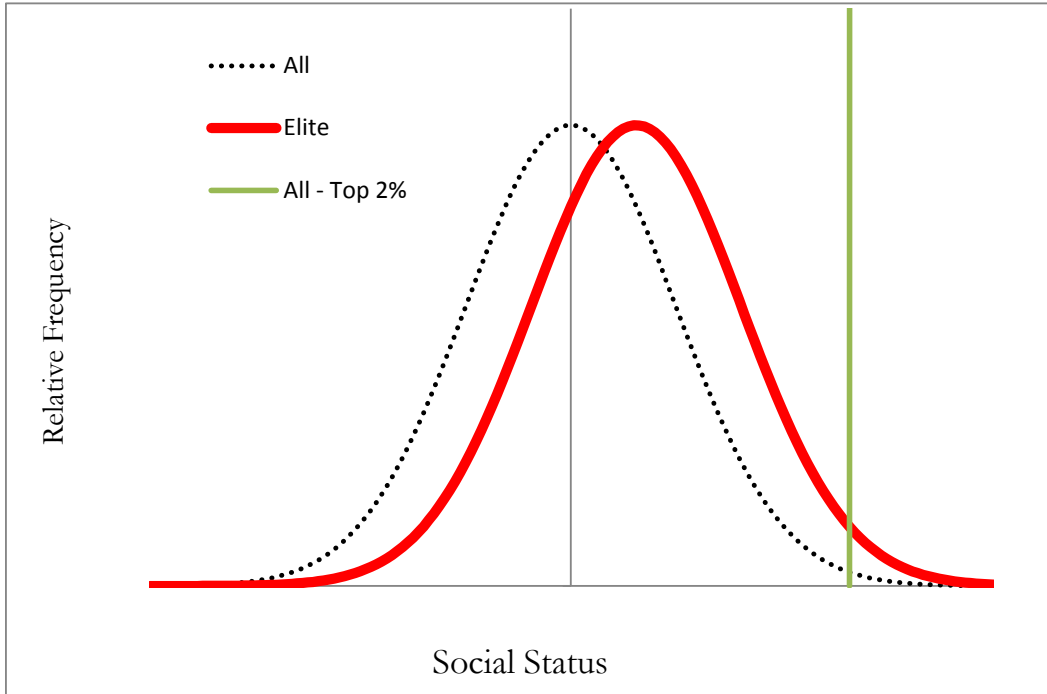
$$\sigma_{zt}^2 = b^{2t}\sigma_{z0}^2 + (1 - b^{2t})\sigma^2$$

If we can observe relative representation over multiple periods we can determine empirically what the best fitting values of b and σ_{z0}^2 are. Thus even though we cannot initially fix \bar{y}_{z0} and σ_{z0}^2 for the elite surname just by observing its over-representation among an elite in the first period, we can fix these by choosing them along with b to best fit the relative representation of the elite surname z in the social elite in each subsequent generation. While we can in general expect that

$$0 < \sigma_{z0}^2 < \sigma^2$$

it turns out to matter little to the estimated size of b in later generations what specific initial variance is assumed. Below we assume that the initial variance of the elite surname status is the same as the overall variance, since this assumption fits the observed time path of relative representation well in most cases. This is the case portrayed in figure 2, where the elite just has a distribution of status shifted up from the mean, but with the same variance as the population at large.

Figure 2: Initial Position of an Elite



To illustrate how this estimate works in practice consider the data in table 2. This shows the relative representation at Oxford and Cambridge Universities in England of high average wealth rare surnames, based on the wealth at death of those born 1780-1809 who died 1858 and later. In 1800-1829 the high wealth surnames show up at 52 times their share in the population among entrants to Oxford and Cambridge. Relative representation for this elite group declined not at all in the years 1830-59, for the children of the first generation. We thus take this second generation as the baseline, and ask what the subsequent decline implies about the rate of social mobility

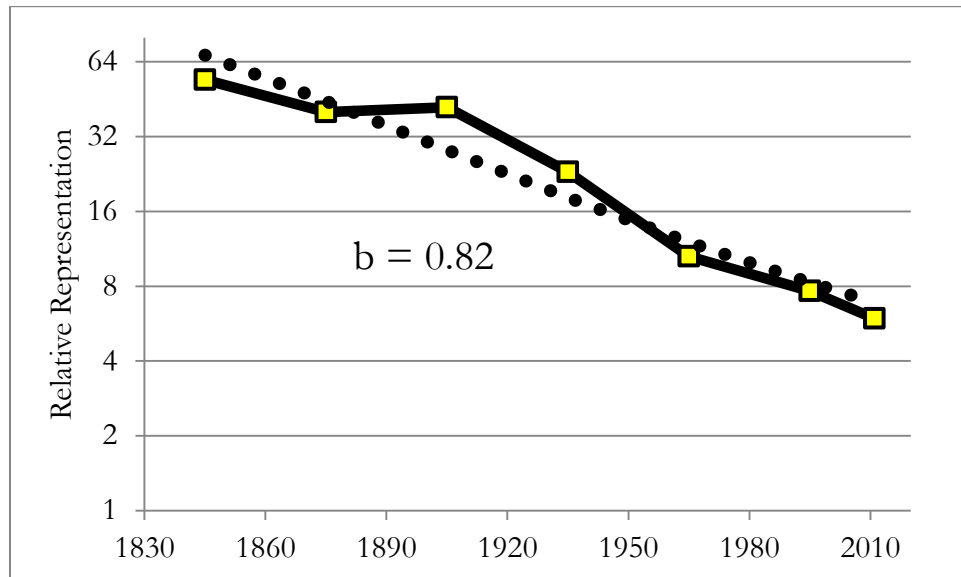
The table shows that the rich rare surnames steadily converging in relative representation towards 1. However, the rate of convergence is slow. Even for the cohort entering Oxbridge 2010-2 the rich rare surnames are still 6 times more frequent relative to the stock of 18 year olds with that name than are common indigenous English names such as *Brown(e)* or *Clark(e)*.

Table 2: Relative Representation of Rare Surnames at Oxbridge, 1800-2010

Period	Sample Size	N Wealthy Surnames	Relative Representation Wealthy Surnames
1800-29	18,649	169	52.2
1830-59	24,415	210	54.2
1860-89	38,678	193	40.1
1890-1919	29,153	114	42.0
1920-49	67,694	115	23.1
1950-79	156,645	110	10.5
1980-2009	221,196	67	7.7
2010-12	33,433	10	5.9

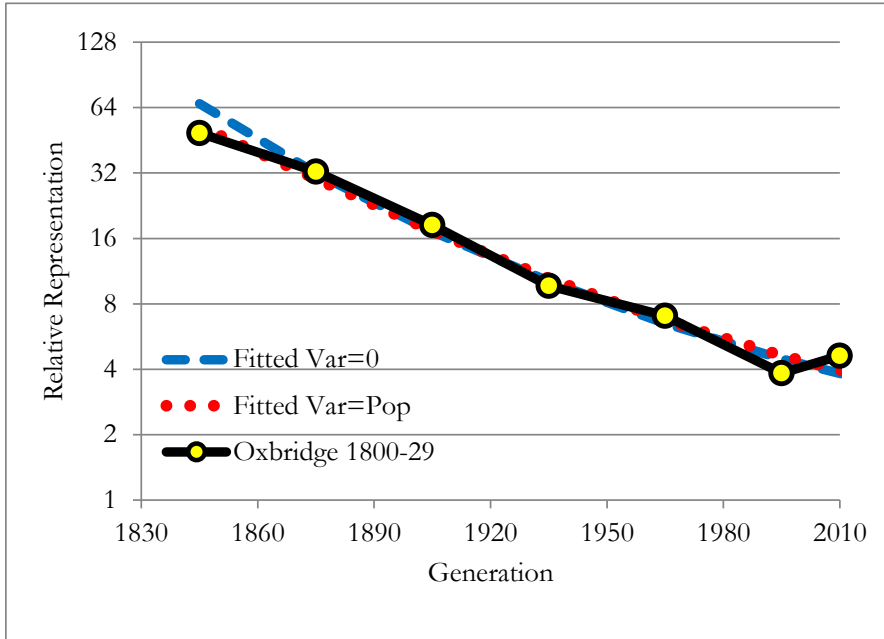
Source: Clark and Cummins, 2012.

Figure 3: Relative Representation at Oxbridge, 1830-2010



Source: Clark and Cummins, 2012.

Figure 4: Assumed Elite Status Variance and the Implied Path of Relative Representation, Oxbridge, 1830-2010



Source: Clark and Cummins, 2012.

What does the pattern in decline of relative representation shown in table 1 imply about the b for education in England? If we assume a normal distribution of status, and that all those of high status had the same variance as the general population, then we can estimate what the b for educational status 1830-2010 was. Oxford and Cambridge students in this period were typically around 0.7% of each cohort. Since the high status surnames had a relative representation of 54 among the this top 0.7% of the educational hierarchy in 1830-59, this fixes what the mean status of those names had to be, relative to the social mean, assuming the variance of their status was the same as that of the general population. For each possible b their relative representation would decline generation by generation in a predictable manner.

Figure 3 shows the actual pattern, as well as the single b that best fits the data.³ For the wealthy group that is $b = 0.82$. Notice also that there is no sign that educational mobility has speeded up in the last few generations. The single b of 0.82 fits the pattern well in all generations.

The rare surnames in this English sample are all associated with wealth. We can form from the Oxbridge records another larger rare surname group which consists just of rare surnames that show up as entrants to Oxbridge 1800-29. Here there is a large decline in relative representation between 1800-29 and 1830-59. But to measure the true implied b it is necessary to start with the generation 1830-59, where the elite surnames were selected based on their occurrence earlier, and so the data is not contaminated by positive errors. As can be seen this group also remains an elite even to 2012. We can also calculate the implied b for the regression to the mean of this group 1830-59 to 1980-2010, assuming as before that the initial variance in status was the same as for the population. It is 0.78, as is shown in figure 4. As before there is no sign of any speeding up of the process in the most recent generations.

Suppose we instead assume that the status variance of the rare surname group observed at Oxbridge in 1800-29 is instead 0 in 1830-59. How would that change the estimated b to best fit the observed pattern of relative representation? Figure 4 shows the fitted path in this case that again minimizes the sum of squared deviations. Here the fit is less good. Such an assumption about initial variance implied a much more rapid initial decline in relative representation, which is not consistent with the data. However, the implied b that best fits the observed pattern changes hardly at all. So if we use the pattern of relative representation over many generations to estimate the implied b , even though we have to make an assumption about the initial variance in status of the elite, that will have little effect on the estimated value of b . In the results below we thus assumed that the variance in status of elite or underclass groups always equals that of the population.

³ Judged by minimizing the sum of squared deviations (in logs).

Japanese Surname Elites

To measure social mobility rates we need only find surnames that are over or under represented among elite groups in earlier generations, and then observe the rate at which their relative status declines. As a heuristic to do this we employ surnames that were associated with two early elite groups: the *samurai*, the former warrior class, and the *kazoku*, the hereditary peerage created after the Meiji Restoration. These surnames should both be overrepresented among elite occupations 1869-1947. In the case of the *Kazoku* this will be because of the members of the family who were in the *Kazoku* themselves, but also their non-noble relatives who would share much of their status characteristics. If, however, social mobility rates are as conventionally estimated for Japan 1947 and later, they should be quickly losing that distinction within modern Japan.

Our first elite surname group are those associated with the *samurai*. By 1868 they had largely evolved into bureaucrats and administrators, and there was a great diversity in their economic circumstances. After the Meiji restoration of 1868 the Samurai lost the legal privileges that had under the Shogunate, though the new government compensated them for hereditary land revenues they had enjoyed with government bonds. But we would expect that they would be subject to substantial social mobility in the years 1868-1946 under the modernization program of Meiji Japan, and then again under the era of the modern constitution 1947-2012. We formed a candidate list of *samurai* surnames from a genealogy of Samurai families, the *Shintei Kansei Choshu Shokafu*, put together by the government (*bakufu*) in 1812 (Takayanagi, Okayama, and Saiki, 1964). Many *samurai*, however, had surnames shared with commoners. Below we explain how we narrowed down this list to a set of rarer surnames that would be more closely identified with the descendants of this class.

Our second elite surname groups are those associated with the *Kazoku*. After the Meiji Restoration of 1868, the new leadership, as part of their Westernization program, merged the *keuge*, the ancient court nobility of Kyoto, with the *daimyo*, the feudal lords, into an expanded aristocratic class. The new *kazoku* peerage initially consisted of just 427 families. However, the Meiji government expanded the hereditary peerage by adding to their ranks persons who had made distinguished contributions to the nation. The total membership grew as is shown in table 3. The

Table 3: Kazoku Membership by Period

Year	Prince	Marquis	Count	Viscount	Baron	Total
1884	11	24	76	324	74	509
1887	11	25	81	355	93	565
1899	11	34	89	363	221	718
1907	15	36	100	376	376	903
1916	17	38	100	380	398	933
1928	18	40	108	379	409	954
1946	-	-	-	-	-	1,011

Sources: Lebra, 1992, 55,

expansion of the Kozaku through the addition of meritorious individuals after 1884 was most rapid in the years before 1907. Thus the Kozaku families represent mainly an elite of wealth and position in Japan that dates from before 1907, though new families were being added even after 1928.

Before its abolition in the 1947 New Constitution, the *kazoku* had a number of privileges, in addition to whatever private wealth they had retained from pre-Meiji times. A number of them received hereditary pensions from the state. The titles and pensions passed by inheritance to the oldest son. Only the holder of a title was considered part of the *kazoku*, other children having no special status. The *kazoku* were entitled to elect representatives from their ranks to serve in the House of Peers.

We employed the *Showa Shinshu Kazoku Kakei Taisai* (1982), a genealogy compiled by descendants of the *Kazoku*, to construct a complete list of surnames once held by *kazoku*.

Measuring inheritance of position by surname for Japanese elites is potentially complicated, however, by the prevalence of adoption both among Samurai and

Kazoku families. When there was no male heir, Kozaku families, for example, would traditionally adopt a son to carry on the title and family line. Supposedly this tradition carried on even after they lost all official position in 1947.⁴ However, those who were adopted were typically sons of other Kozaku families. Similarly Samurai families without sons would traditionally adopt the sons of other Samurai. So the surnames of these families still carry information about the status of the groups as a whole.

By 1898, and even earlier, surnames in Japan had become strictly hereditary, with little possibility that the rare surnames of the elite were being adopted by less distinguished families. The 1898 The Family Registration Law dictated that each household had a surname inherited by children, with married women adopting their husband's surnames (Ando, 1999, 259). Adopted child took on the surname of the head of the family (Kitaoji, 1971, 1046). After WWII the *Kosekiho* of 1947 established that only the head of a family could apply for a surname change, which if granted applied to the entire family. But surname changes were to be granted only in cases of "unavoidable reasons." We thus expect there was little surname changing after 1947.

To reduce our candidate surname lists to a sample of rare surnames we need a count of surname frequency in Japan. Because there are an estimated 110,000 Japanese surnames we should be able to find large numbers of relatively rare surnames. Both these sources give surnames in Kanji, the Japanese character system. One source we have for the modern frequency of these surnames is *World Names Profiler*, an internet surname database which in the case of Japan is derived from the surnames associated with 44.9 million households, close to the estimated total of 51.84 m households in Japan in 2010.⁵ We count as rare surnames those in *World Names Profiler* which have a reported frequency per million (FPM) of 10 or under.

There are three limitations with the *World Names Profiler* data. The first is that it seems to omit surnames held by only 1 or 2 households. *World Names Profiler* reports surname frequencies as Frequency per Million, and the minimum frequency reported

⁴ Lebra, 1993, 106-132.

⁵ <http://worldnames.publicprofiler.org/Main.aspx>. The underlying database was obtained from Acton Winds Co. Ltd., a Japanese direct mail company that assembles data from telephone directories, residential maps, and field collection of name plate data on residences. It has information to 2007 (communication from Paul Longley). The estimated total of Japanese households in 2010 is from the census bureau.

is 0.07, which would imply 3 households held that surname in the Acton Winds database. For surnames with a recorded FPM of 0 we thus assume the FPM was actually 0.04.

The second limitation is that *World Names Profiler* employs a Romanized version of Japanese surnames, based on their pronunciation. There are three Romanization styles for Japanese characters: Hepburn, Nihon-shiki, and Kunrei-shiki. While Hepburn is the most commonly used form, some of the names in *World Names Profiler* were more commonly represented using the Nihon-shiki style Romanization. For instance, the name “秋月” can be Romanized as “Akizuki” under the Hepburn style or “Akiduki” under the Nishon-shiki form. Under the Hepburn translation we find an FPM of 0.49, qualifying this surname as rare. But in the Nihon-shiki translation the FPM is 67, making this common. We checked the names employed as rare across both translations to ensure that they really were rare.

The third limitation is that there are surnames with different Kanji, but the same pronunciation. An example of this problem is that the Kanji “北条” and “北條” have the same pronunciation “Hojo”, so that it is not possible to get a good estimate of the surname frequency of either of these surnames alone. Complicating matters further, there are surnames with the same Kanji, but different pronunciation. For instance, the name “鮫島” can be pronounced “Sameshima” which yields a FPM of 2.36, or “Samejima” with a FPM of 135.33. Since the genealogical sources often did not include pronunciation guides, such surnames with multiple possible pronunciations were excluded from our sample.

Table 4 shows the composition of our two surname samples. The Appendix lists the surnames used associated with each early elite. If we calculate the relative representation of the surnames among high status occupations in modern Japan – medical researchers, 1989-90, attorneys, 1987, corporate managers, 1993, university professors, 2005, and scholarly publishers, 1990-2012 – in all cases these surnames are overrepresented compared to their share of the population. The average rate of representation is 3 times the expected for the *kosoku*, and 4.3 times the expected for the *samurai* surnames. Thus these rare surnames do identify a population that is on average overrepresented in modern Japanese groups of high social status, across a broad range of activities. Interestingly the *samurai* surnames, despite their being selected from a genealogy of 1812, are much more overrepresented in 4 of the 5 high status groups in the modern era than are the *kosoku* surnames.

Table 4: The Rare Surname Samples

FPM	Estimated number of surname Holders	<i>kosoku</i> Number of Surnames	<i>kosoku</i> Implied population with names	<i>samurai</i> Number of Surnames	<i>samurai</i> Implied population with names
0-0.81	0-99	59	1,658	68	1,638
0.81-1.61	100-199	15	1,890	18	2,450
1.61-3.23	200-399	19	5,940	19	5,714
3.23-8.06	400-999	33	24,098	69	48,480
8.06-10	1,000-1,240	7	7,757	15	16,514
All		132	41,343	189	74,797

Note: Assuming a population of Japan of 124 million, corresponding to 1990.

Figure 5: Relative Representation of Rare Surnames among High Status Groups, 1989-2012.

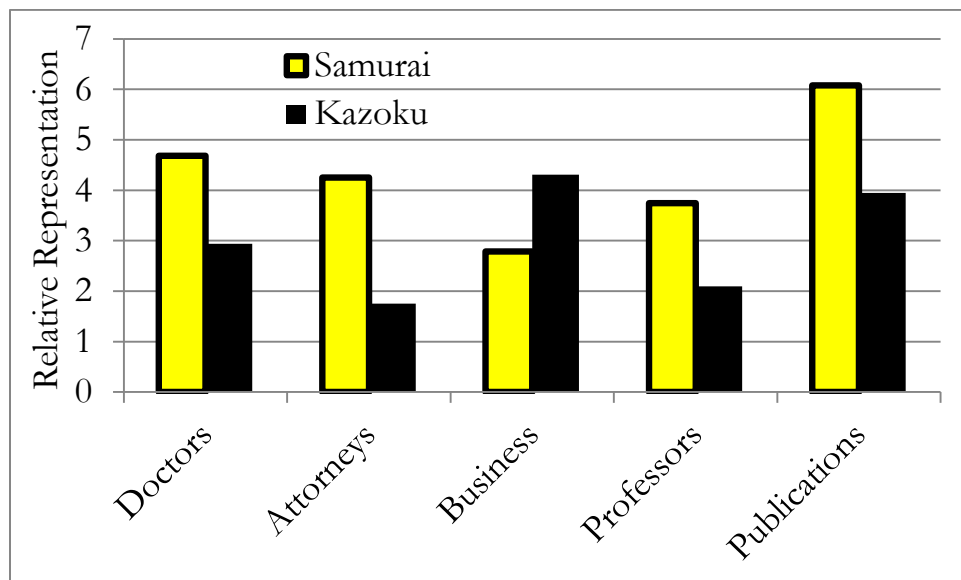


Table 5: Births by Education

	1940	1952	1962	1967
All	5.1	4.5	3.9	3.4
<u>Husband's education</u>				
Low	5.2	4.6	4.0	3.4
Middle	4.8	3.6	3.6	3.3
High	4.2	3.5	3.2	2.9
<u>Wife's education</u>				
Low	5.2	4.6	4.0	3.5
Middle	4.4	3.6	3.5	3.1
High	4.7	3.1	3.1	2.7

Source: Hashimoto, 1974, S184

To calculate the Relative Representation of these surnames in elites back as far as 1900 we need to know the population shares of these surnames in earlier generations. Absent better data, we are forced to assume that the population share of these surnames was the same in 1900 as in 2007.

There is evidence, however, that over much of this period the population growth of high status groups in Japan was lower than that of the population as a whole. Table 5, for example, shows marital fertility by education for couples completing fertility in 1940 to 1967. Those with more education had consistently lower rates of fertility than their less-educated counterparts. Even presuming that high education families in Japan had lower infant and child mortality rates in the years 1920-70, most likely the growth rate of population for Japanese elites has been lower than that of the general population for the last three generations. This implies

that the population shares of the surnames we trace here will be higher than calculated for earlier years, and hence that the Relative Representation of these surnames among elites lower than estimated for earlier decades. This will bias downwards the estimates of b that we derive here.

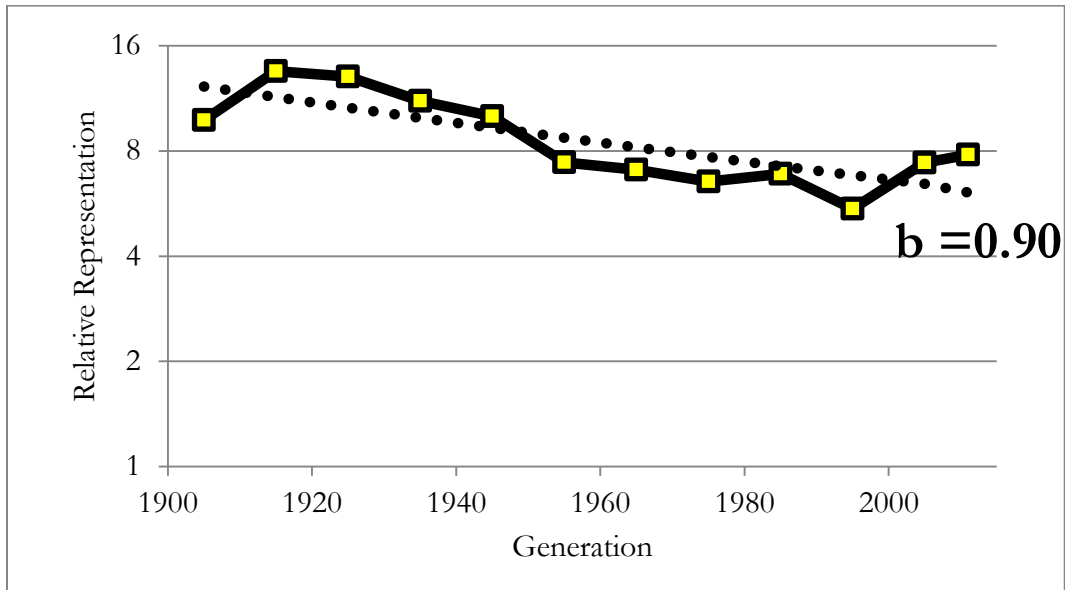
Social Mobility as Measured by Publication Rates

Using Google Scholar we can measure the publications associated with *samurai*, *kazoku*, and common surnames for 1900-2012. The comparison list of common surnames was composed of the ten most common Japanese names. To estimate the relative representation of rare Samurai and Kazoku surnames by decade we calculated the publication frequency relative to the FPM in *World Names Profiler*, then divided this by the equivalent publication frequency of the most common surnames.

Google Scholar as a source, however, provides its own share of complications. We elected to search the surnames using Romanized translations, because if we used the Japanese characters because we would be unable to distinguish between the different pronunciation styles. Since the Romanizations of Japanese surnames can also be surnames in other countries, and there has been migration from Japan we excluded any surname that had a Frequency per Million in *World Names Profiler* higher in any country other than Japan. While there has been migration from Japan, so that scholars with these surnames can appear in other countries, this should only be adding some noise to the measures as long as these names are predominantly held by Japanese researchers.

Figures 6 through 7 plots the relative representation of the scholarly articles by the *Samurai* and *Kazoku* rare surnames by decades, 1900-9,..., 2000-9, 2010-12. Both the *Samurai* and *Kazoku* surnames are heavily overrepresented among publications in the initial decades, with relative representations of 12 and 24 respectively. That relative representation declines over time, but is still more than 4 for both groups 1990-2012. Indeed for both groups there is an upturn in relative representation in the decades 2000-9 and 2010-12.

Figure 6: Samurai Relative Representation among Publications, 1900-2012



B = 0.89

Figure 7: Kazoku Relative Representation among Publications, 1900-2012

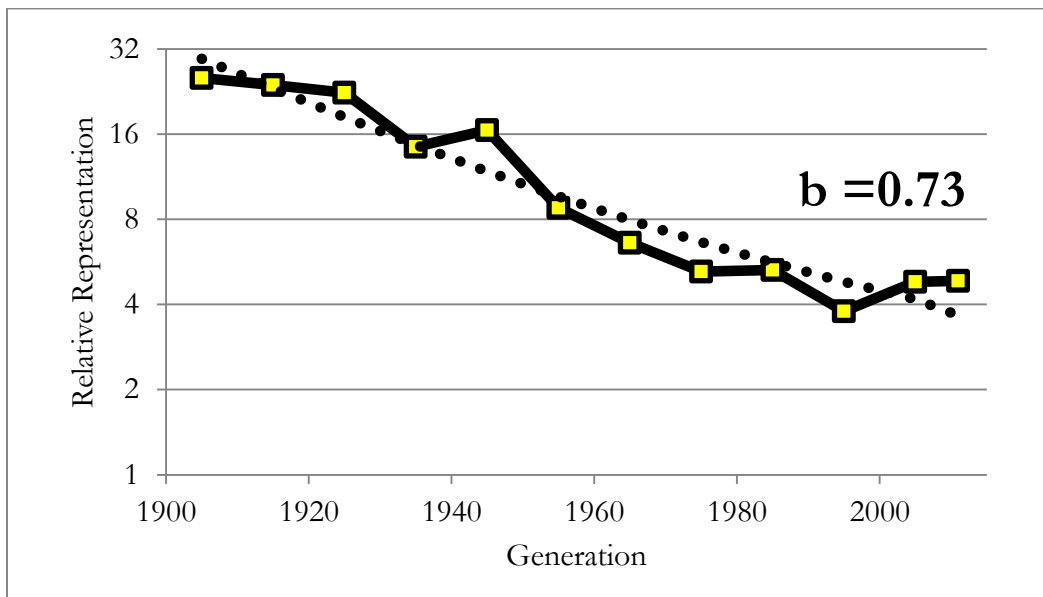


Table 6: Persistence Estimates Pre and Post 1950

	1900-2012	1900-1949	1950-2012
Samurai	0.90	0.97	0.95
Kazoku	0.73	0.82	0.78

We calculate the b , the generational measure of persistence, that best fits all 12 observations, assuming a generation is 30 years.⁶ For the rare Samurai surnames the estimated rates of regression to the mean in publication frequencies is extremely slow. Over the entire interval the best fit is 0.90, which implies a very high degree of persistence. There is some sign, particularly in the case of the Kazoku, that the rate of relative representation fell more sharply between 1940-9 and 1950-9 than on average. This possible discontinuity could be associated with the major regime change of 1947, when the Kazoku lost their privileges under the new constitution.

Table 6 shows the separate persistence estimates, dividing the data into the 1900-49 decades, and the 1950-2012 decades. Splitting the period results in even higher sub-period estimates of b for the Samurai, of 0.97 and 0.95 respectively.

One b of 0.74 again fits reasonably well for the *Kazoku* across four generations, though, as noted, there is sign of a larger than trend fall in relative representation 1940-9 to 1950-9. The estimated b s, or generational persistence, rises in both sub-periods if we estimate each period separately.

⁶ Best fit measured by minimizing the sum of squared errors, measuring relative representation in logs, and taking the publishing elite to represent the top x% of Japanese society.

Medical Researchers

Another high status group we can track over time is medical researchers. We have directories of such doctors in Japan for 1965-6, and 1989-90, a 25 year interval. On average this represents nearly a one generation gap. Table 6 shows the relative representation of the Kazoku and Samurai rare surnames among medical researchers in each year. The names are again distinctly overrepresented. In the bottom row of the table are the implied values of the persistence parameter, b , adjusted to a 30 year generation length. The values are a bit lower than for the publications 1950-2012, being 0.63 and 0.82 respectively. But this could be due to chance since in each case. Because of the small populations bearing these rare surnames, 41,000 and 75,000 respectively circa 1990, the numbers of observed medical researchers in 1965 and 1989 from each group is small.

We would hypothesize that the rarer the Samurai or Kazoku surname is now, the higher would be its relative representation among elites, since the more likely would the modern bearers of the name be actual descendants of Kazoku or Samurai forbears. We test this with the medical researcher data in table 7. This splits up the surnames into those with a frequency less than 5 per million, and those with a frequency 5-10 per million.

The expected result that the surnames are more overrepresented the rarer they are holds for the Samurai surnames, but not for those of the Kazoku. However, we see above extremely small numbers of Kazoku surnames on our list among medical researchers so the power of this test is very low. However, having partitioned the rare surnames by their frequency, we can also calculate the implied b for each subgroup. If the model we posited at the beginning of the paper is correct then the b estimated for both types of surname should be the same. The rarity of the surname itself should not have any influence on the rate at which the surname holders are regressing to the social mean. In table 8 we see that while the estimates are not identical, the b estimated for the rarer and less rare surnames is in both cases much higher than would be expected by conventional mobility studies.

Table 7: Medical Researcher Relative Representation, 1965-89

Directory (Year)	Samurai	Kazoku
Observed 1965-6	30	13
Observed 1989-90	70	23
1965-6	5.99	4.95
1989-90	4.69	2.94
Implied b	0.84	0.64

Table 8: Medical Researcher Relative Representation, by Name Rarity

Directory Year	Samurai to Common		Kazoku to Common	
	0-5	5-10	0-5	5-10
FPM				
1965-66	10.63	3.91	4.23	5.20
1989-90	8.38	3.13	2.88	2.96
Number with name, c. 1990				
Implied b	0.86	0.81	0.68	0.60

Social Mobility among the Samurai in the Meiji Era

Using the data on the share of Samurai graduating from universities and entering professions in 1890, 1895, and 1900 from Amano we can also estimate an implied b for the Samurai in the early Meiji era. The short time period and the small numbers of students involved in some of the subcategories means that the individual estimates have a lot of variation. But assuming that by 1890 the samurai had the same normal variance of underlying social status as the general population, we can estimate by the decline in the shares of the samurai the implied generational b . Table 9 shows the relative representation of the Samurai at each type of educational institution 1890, 1895 and 1900. This is calculated assuming that the samurai represented 5.3% of the population (Sonoda, 1990, 103). The last column shows the implied b , assuming that these groups all represented the top 1% of the status distribution in this era.

The average implied b is high, 0.73, and the b estimated for the highest status institutions, the Imperial Universities, is close to this at 0.72. Thus even the raw data of table 1, which suggests to the untrained eye high rates of social mobility, is actually consistent with social mobility rates being low also in the Meiji era. This b is calculated assuming that the Samurai remained constant as a share of the university aged population 1890 to 1900. There is reason to believe that if anything their population share would be declining. For example, the source that gives samurai and commoner populations in 1881 estimates and average family size for samurai of 4.54 persons, compared to 4.78 for commoners (Sonoda, 1990, 103). Any decline in the share of the young population samurai between 1890 and 1900 would imply less of a decline in relative representation at universities and professional schools of samurai, and hence an even higher b .

Harry Harootunian gives the share of central and local government employees in 1872 to 1882 who were of samurai origin (Harootunian, 1959, 260-1). These statistics are summarized in table 10. The samurai share in government officials again in 1868-75 greatly exceeded their share in the population. But as with graduates of the universities this share began immediately to decline. However again the rate of decline was consistent with a high rate of persistence, b , in the region of 0.71-0.72.

Table 9: Implied bs for Samurai, 1890-1900

	Relative Representation 1890	Relative Representation 1895	Relative Representation 1900	Implied b
Imperial				
Universities	11.94	11.13	9.58	0.72
Higher schools	11.62	11.19	9.00	0.66
National Government Professional Schools				
Medicine	6.60	6.64	5.15	0.62
Commerce	9.26	9.06	8.11	0.80
Engineering	13.47	10.23	10.55	0.67
Agriculture	9.08	7.45	5.40	0.39
Local Government Professional Schools				
Medicine	5.21	2.57	4.53	0.61
Private Professional Schools				
Medicine	5.02	4.53	4.74	0.88
Law	5.23	6.21	6.43	1.50
Liberal Arts & Sciences	11.28	8.32	6.66	0.40

Source: Amano, 1990, 193.

Table 10: Composition of Government Officials, 1872-82

Year	Central All	Central Samurai	Central Samurai %	Local All	Local Samurai	Local Samurai %
c. 1872	-	-	78.3	-	-	70.0
1876	23,135	17,935	77.5	-	-	-
1882	96,418	59,041	61.2	14,171	8,148	57.5
Implied b			0.71			0.72

Source: Harootunian, 1959, 260-1.

Notice in tables 9 and 10 that the percentage of elite positions occupied by the Samurai is higher the greater the status of the position. Thus in medicine the samurai were more heavily concentrated in the National medical school than in the local or private schools. They were also more concentrated among national government officials than among local government officials. This is consistent with the assumption that an elite group such as the samurai will have higher average status, but as much dispersion as the general population. On that assumption if an elite has 10 fold overrepresentation in the top 1% of the status distribution, it will have 4.3 fold overrepresentation in the top 1-5%, and only 2.6 fold overrepresentation in the top 5-10%.

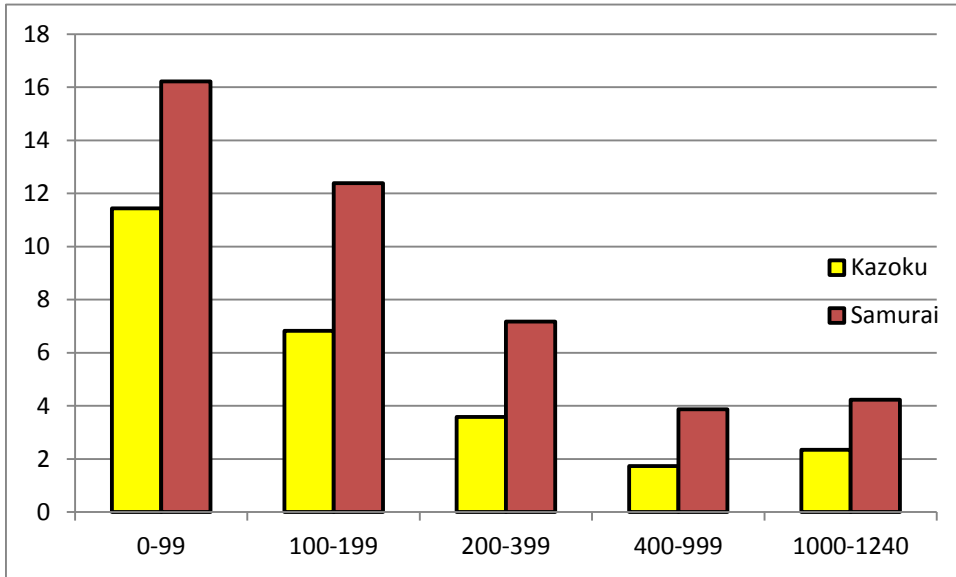
Samurai versus Kazoku

Figure 5 summarized the results we have for the relative representation of the Kazoku and Samurai surnames among elite groups 1989 and later. Except for business, the Samurai surnames show up as more overrepresented. Yet there is good reason to think that in general the Kazoku were more of an elite before 1947. In 1881 for example, while 16% of Samurai families were reported as holding official government posts, 33% of Kazoku families held such positions (Sonoda, 1990, 103).

This result could perhaps stem from differences in the size of the Kazoku surnames as opposed to the Samurai surnames. Figure 8 shows relative representation controlling for the frequency of the surnames used. It shows average relative representation by surname frequency for 5 elite groups observed 1976-2005. These are physicians in 1976, attorneys in 1987, medical researchers in 1989, directors of companies in 1993, and university faculty in 2005. The surnames are grouped in the figure according to their estimated frequency in the Japanese population in 2007: 0-99, 100-199, 200-399, 400-999, and 1000-1240.

Several things stand out in figure 8. First the rarer the surname the greater its relative representation in these 5 elites 1976-2005. The rarest surnames are 12-16 times overrepresented, while for the most common it is just 2-4 times. Some of this effect will be a statistical artifact. Since these surname frequencies are based on a sample, though a very large sample, or family surnames in Japan they will give an imperfect measure of the stock of each surname in the population at large. That means that the surnames assigned to the rarest groups will tend to be those whose

Figure 8: Relative Representation of Kazoku and Samurai Surnames by Estimated Frequency of Surname in Population c. 2007.



true population frequency is greater. Experience elsewhere suggests that the true frequency of these rarest surnames will be at least 25% greater than reported. But the overrepresentation of the rarest surnames is so great that even if we assumed their true frequencies were double the reported they would still have much greater just a statistical artifact. This supports the idea that the rarer are the Kazoku or Samurai surnames now, the more likely would the modern bearers of the name be actual descendants of *Kazoku* or *Samurai* forbears.

The second impression from figure 8 is that the Samurai descendants have remained more an elite than those of the *Kazoku*, even controlling for the surname frequencies. This is in line with the publication records from Google, where the lower rate of regression to the mean left the *Samurai* surname holders with a significantly higher relative representation than those of *Kazoku* surnames by 2000-12. This effect is interestingly uniform across all surname frequencies. It also appears in all occupations in figure 5, except for business.

Why has regression to the mean, as revealed by the google scholars counts of publications, the medical researchers in 1965-1989, and in figure 8, been faster for the *Kazoku* than the Samurai descendants? Despite the *Kazoku* publishing at 24 times the expected rate 1900-19, and the Samurai then only at 12 times the expected rate, by 2000 the Samurai were more overrepresented in publication than the *Kazoku*.

One interesting difference between the two groups is that the Samurai surnames were identified as belong to at least one Samurai family in 1812, while the *Kazoku* surnames were identified as belong to a family added to the *Kazoku* between 1869 and 1946. Only 42% of the *Kazoku* derived from the hereditary nobility, while the other 58% were fresh creations from people who had achieved distinction in the military, administration, commerce, and professions between 1869 and 1946.

The structure we posited above is that families have an underlying social status x_t , which regresses slowly to the mean, but is related to observed status on any dimension y through a random error component, such that $y_t = x_t + u_t$. Given this structure when we observe Samurai publication rates 1900 on though google Scholar, which is our y , we have preselected these names based on 1812, so that the expected value of the errors u will be 0, and the rate of regression of the average value of y to the mean will indicate the rate of regression of the underlying status x , even though y is just a partial indicator.

However, in the case of the *Kazoku*, many of whom achieve prominence only after 1880, and constituted the initial cohort of this elite, those showing up as publishers 1900-1949, and even in the 1950s and 1960s, would include many who were newly appointed *Kazoku*, because of their distinction in scholarly or technical fields. Thus for this group the expected error relating publication distinction, y , to underlying status, x , will be positive on average. The observed regression to the mean of the publication rate y will thus be greater than the rate of regression to the mean of underlying status x , because in the succeeding generations the average error u linking publication rates to underlying status will once again be 0.

Despite the observed faster regression to the mean of the *Kazoku*, there thus may well be no inherent difference in the social mobility rates of the *Kazoku* and the Samurai descendants after 1947. If this explanation is correct, however, we would expect that by the 1970s, when most of the originally created *Kazoku* were dead, then the rate of regression to the mean of both groups should be the same (since the

expected error term relating their observed status on any measure y , to underlying status x , will now be zero for both groups).

Common Surnames

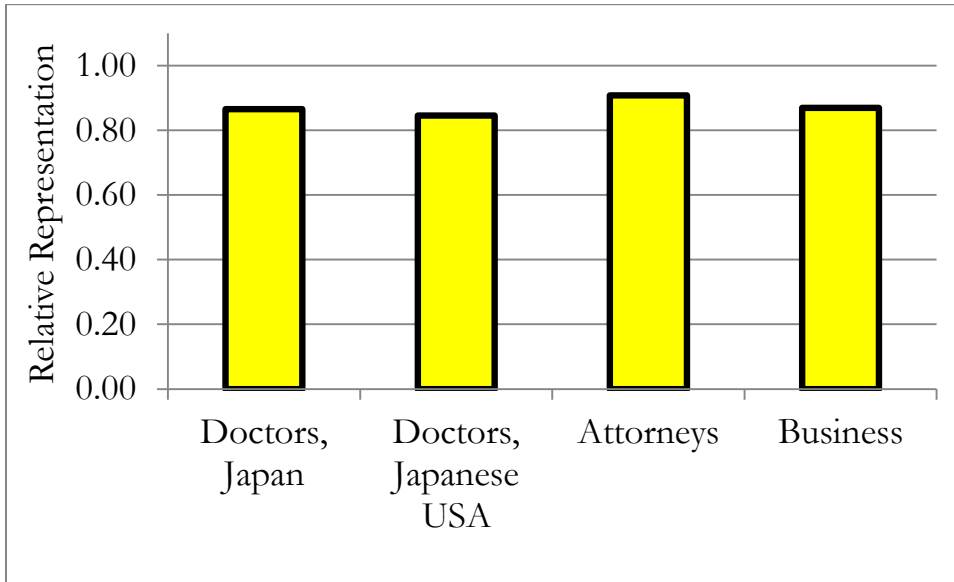
Confirmation of the slow social mobility rates of Japan is that even recently, 3-4 generations after everyone in Japan had acquired a surname, the commonest surnames in Japan are underrepresented among social elites in recent years. This underrepresentation is not dramatic. These surnames show up in elites at 80-90% of what would be expected. But it confirms that there must be another class of surnames, such as we observe above, that are overrepresented.

The first such evidence comes from medical doctors trained in Japanese medical schools registering in the USA. The 2012 American Medical Association records 1,047 such doctors. If we take the 50 most common surnames in Japan, listed in the appendix table 1, then they constituted 24.6% of the Japanese population in 2007. However, the Japanese doctors with these surnames constitute only 19.9% of Japanese doctors in the USA. This implies that the relative representation of these surnames is only 0.808. The standard error of this estimate is 0.050, so we can say with high probability that these common surnames are indeed not proportionately represented within this elite.

The AMA data also gives the date of graduation of each registrant. We can thus divide the Japanese doctors into two generations, those graduating 1950-79 and those graduating 1980-2012. The relative representation among this group of doctors with these common surnames in 1950-79 is 0.766, and in 1980-2012 is 0.846. Thus again we see sign of regression towards the mean. But the b implied by this rate of convergence, assuming doctors represent the top 0.5-1.0% of the society, is 0.64-0.65. This estimate has a very high implied standard error, but it is sign again that the rate of social mobility in Japan are much lower in the modern era than conventionally estimated.

This underrepresentation shows up also among Japanese doctors, among attorneys, and among business executives, as figure 9 illustrates.

Figure 9: Relative Representation of Common Surnames among Elites, 1980-2012



Interpretation

We observe above the surprising persistence of the Samurai and Kazoku as elites in modern Japanese society, despite the Samurai losing any legal privileges by 1871, and the Kazoku losing their privileges by 1947. In particular if the descendants of the Samurai constitute 5% of the modern Japanese population, then they could still constitute anywhere from 20 to 50% of modern Japanese elites. Why is this happening? Is this revealing an immobility that is peculiar to Japan?

The first thing that we can be sure of is that the low social mobility rates detected here using surnames as a marker of group membership are not unique to Japan, but in fact quite typical of the social mobility rates found elsewhere using surnames similarly as group markers. Table 11 below shows, for example, estimated persistence rates for England and Sweden 1850-2012 for wealth, education, and occupations. The individual estimates range from 0.65 to 0.85, but with an average around 0.75. The estimated social mobility rates for the Meiji era Samurai fall comfortably within that range. The b estimated for the Samurai of 0.82 from their

Table 11: b Values for England and Sweden from Surnames

Period	England Wealth at death	England Education	Sweden Education	Sweden Doctors
1850-99	0.71	0.79-0.82	0.75-0.82	-
1900-49	0.71-0.86	0.79-0.82	0.85	0.70
1950-2012	0.61-0.68	0.79-0.82	0.66	0.70

Sources: Clark and Cummins, 2012, Clark, 2012.

representation among medical researchers 1965-1989 is also within this range. The b implied for the common surnames among doctors from Japan working in the USA again lies within this range. The only anomaly in the Japanese case is the very high b found for publications listed in Google Scholar for Samurai surnames

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Appendix: Common, Samurai, and Kazoku Surnames

A1: Common Surnames

Common Surnames	Kanji	Frequency per Million
Sato	佐藤	14392
Suzuki	鈴木	12906
Watanabe	渡辺	11138
Takahashi	高橋	10843
Tanaka	田中	10474
Saito	斉藤, 齋藤	9420
Ito	伊藤	9286
Yamamoto	山本	8715
Nakamura	中村	8566
Kobayashi	小林	7889
Yoshida	吉田	6591
Kato	加藤	6481
Yamada	山田	6367
Matsumoto	松本	5268
Yamaguchi	山口	4924
Inoue	井上	4814
Kimura	木村	4622
Sasaki	佐々木	4436
Abe	阿部	4326
Shimizu	清水	4245
Hayashi	林	4198
Nakajima (Nakashima)	中島	3921
Yamazaki (Yamasaki)	山崎	3831
Ikeda	池田	3641
Hashimoto	橋本	3582
Ota	太田	3489
Mori	森	3484
Yamashita	山下	3454
Ishikawa	石川	3240
Sakamoto	坂本	3182
Maeda	前田	3178
Ogawa	小川	3121
Fujita	藤田	3058
Okada	岡田	3002

Goto	後藤	2993
Murakami	村上	2907
Hasegawa	長谷川	2905
Ishii	石井	2866
Kondo	近藤	2788
Fujii	藤井	2577
Endo	遠藤	2576
Nishimura	西村	2551
Aoki	青木	2531
Okamota	岡本	2489
Fukuda	福田	2475
Nakagawa	中川	2459
Takeuchi	竹内	2423
Miura	三浦	2411
Matsuda	松田	2408
Kaneko	金子	2294

A2: Samurai Surnames

Surname	Kanji	FPM
Aichi	愛知	7.25
Akabayashi	赤林	1.98
Amau	天羽	0.60
Anjo	安生	2.98
Anma	安間	0.64
Aramomi	新糶	3.47
Arikabe	有壁	0.84
Awazu	粟津	0.73
Chichibu	秩父	6.00
Chigusa	千種	6.91
Chikayama	近山	6.18
Chikuhisa	知久	0.04
Daidoji	大道寺	8.87
Daizennosuke	大膳亮	0.04
Doki	土岐	4.22
Domono	伴野	0.04
Efuji	江藤	0.04

Enokishita	榎下	0.04
Fujikata	藤方	5.07
Fukazu	深津	0.04
Fukuzue	福富	0.04
Furukohori	古郡	0.04
Furusaka	古坂	1.16
Fushiki	伏木	1.71
Futami	二見	4.78
Giga	儀我	4.13
Gonta	権太	0.93
Habuto	羽太	0.04
Hakura	羽倉	6.25
Hasebe	長谷部	7.38
Hashikano	初鹿野	0.04
Hawaka	葉若	0.62
Hine	日根	7.56
Hineno	日根野	6.73
Hiru	比留	0.36
Hisada	久田	3.98
Hisanaga	久永	3.44
Hitotsuyanagi	一柳	0.89
Hojo	北條	8.31
Honme	本目	2.89
Horiya	堀谷	0.69
Hoshiai	星合	9.33
Hosoido	細井戸	0.64
Ichio	一尾	7.31
Ikahata	五十幡	0.04
Imaoji	今大路	0.62
Inafu	稻生	0.04
Ineno	稲野	0.13
Ioku	伊谷	7.78
Iritono	入戸野	5.82
Ishidera	石寺	2.49
Ishimaki	石巻	5.38
Ishirai	石来	0.04
Isogaya	磯谷	4.25
Itahana	板花	9.93
Iwate	岩手	3.33
Jinbo	神保	3.73
Kagatsume	加々爪	3.87

Kahara	河原	5.00
Kainosyo	甲斐庄	0.44
Takehi	箕	2.29
Kakibe	垣部	0.29
Kaminuma	神沼	2.51
Kamiryō	上領	7.29
Kamonomiya	賀茂宮	0.04
Kanbara	神原	4.38
Kaneyasu	兼康	9.53
Kanko	寒河	0.58
Kashii	櫛井	5.71
Katsu	勝	5.07
Kawazoi	川副	0.04
Kazamatsuri	風祭	4.45
Kimuro	木室	7.98
Kira	吉良	3.98
Kiyosu	清須	3.78
Kizuregawa	喜連川	0.04
Komeda	米田	1.02
Konagaya	小長谷	1.71
Koriki	高力	7.93
Kose	巨勢	5.09
Kotaba	小把	0.62
Kozukuri	木造	0.04
Kurusu	栗栖	8.60
Kushimoto	久志本	8.98
Kutsuki	朽木	0.69
Kutsumi	久津見	4.09
Maeba	前場	3.64
Magaki	曲木	5.89
Magaribuchi	曲淵	9.11
Makunouchi	幕内	0.04
Manase	曲直瀬	0.31
Matsucho	松長	0.04
Matsukaze	松風	0.40
Mikawaguchi	三河口	0.04
Mikumo	三雲	7.85
Mitsubuchi	三淵	0.82
Mitsuwa	三輪	1.76
Miyashige	宮重	7.47
Mizokuchi	溝口	0.04

Monna	門奈	8.07
Motoyasu	本康	4.33
Muragaki	村垣	2.78
Musya	武者	7.09
Nagashiho	長志保	0.04
Nakabatake	中畠	0.04
Nakajo	中條	0.42
Nakanobo	中坊	0.31
Nakarai	なから井/ 半井	6.07
Nanhada	難波田	0.04
Nasa	奈佐	3.02
Negoro	根来	5.78
Nie	贅	3.91
Nigatake	苦竹	0.11
Nikaho	仁賀保	0.07
Nunoshita	布下	0.04
Ogyu	荻生	6.96
Ohanawa	小花和	0.04
Okagaya	岡谷	0.04
Okakami	岡上	0.04
Okamuro	岡室	7.27
Okanobori	岡上	0.04
Okuya	奥谷	6.91
Otsuhata	乙幡	9.13
Rokkaku	六角	0.04
Rokugo	六郷	2.96
Sahase	佐橋	0.04
Saigusa	三枝	0.93
Sakisaka	向坂	1.60
Sanei	眞井	1.47
Sasafu	佐々布	1.11
Sasagase	篠瀬	2.40
Sasase	笹瀬	4.45
Sasatake	佐々竹	1.71
Seyakuin	施薬院	0.04
Shihonoya	しほの谷	0.04
Shihota	しほ田	0.04
Shikakura	鹿倉	0.44
Shimoeda	下枝	6.51
Shimosone	下曾禰	0.56

Shinmi	新見	0.13
Shizume	鎮目	7.89
Sodeoka	袖岡	5.27
Soshi	曾雌	7.45
Suetaka	末高	2.51
Sugenoya	菅谷	0.04
Sugieda	杉枝	1.33
Suguro	勝	3.64
Sumikura	角倉	5.96
Sunami	角南	8.20
Takahi	高樋	7.38
Takatsukasa	鷹司	1.16
Takegaki	竹垣	8.31
Tamamushi	玉虫	4.16
Tamei	為井	4.71
Tarao	多羅尾	3.96
Tohgi	東儀	0.04
Tokuriki	徳力	3.53
Tomatsuri	戸祭	8.16
Tomitsu	富津	0.04
Tsubai	椿井	2.20
Tsugaru	津軽	6.40
Tsumaki	妻木	8.67
Tsutaki	蔦木	7.00
Uchikata	内方	5.13
Uchisaki	内崎	2.56
Ugaki	宇垣	2.69
Urushido	漆戸	6.87
Ushibukuro	牛袋	0.62
Ushigomi	牛込	0.04
Ushioku	牛奥	1.04
Uzu	宇津	0.82
Uzhashi	堆橋	4.78
Wakabe	分部	0.82
Wakafuji	若藤	6.51
Washinosu	鷺巢	0.20
Yaemori	八重盛	1.00
Yamasoe	山添	0.04
Yamataka	山高	5.51
Yamazuke	山菅	0.04
Yasumi	安見	7.38

Yatabori	矢田堀	1.29
Yonekitsu	米津	0.04
Yoneno	米野	0.31
Yoshimasu	吉益	7.38
Yugeta	弓削田	6.36
Yuhi	由比	1.53
Yuketa	弓気多	0.04
Zakoji	座光寺	2.93
Urushizaki	漆崎	9.98
Aburanokoji	油小路	0.18
Anbe	安部	0.91
Anegakoji	姉小路	0.31
Arichi	有地	8.02
Asukai	飛鳥井	5.31
Awataguchi	栗田口	1.13
Ayanokoji	綾小路	0.71
Bojo	坊城	2.16
Chikusa	千種	6.91
Chinda	珍田	9.07
Chosyo	調所	1.71
Dewa	出羽	0.80
Fujioji	藤大路	0.09
Fushihara	伏原	8.69
Futaara	二荒	0.04
Hachijo	八条	2.38
Hamuro	葉室	8.42
Higashibojo	東坊城	0.16
Higashifushimi	東伏見	0.04
Higashikuze	東久世	0.04
Higashisanjo	東三条	0.04
Hinonishi	日野西	0.91
Hirasa	平佐	6.78
Hitotsuyanagi	一柳	0.89
Hojo	北条	8.31
Honami	穂波	6.27
Ie	伊江	5.80
Imasono	今園	3.40
Isahaya	諫早	3.29
Isechi	伊瀬知	6.53
Ishiko	石河	6.42

Itouzu	到津	0.04
Itsutsuji	五辻	0.93
Jikoji	慈光寺	1.89
Jimyoin	持明院	0.53
Kacho	華頂	0.53
Kadenokoji	勘解由小路	0.04
Kajuji	勧修寺	0.22
Kanroji	甘露寺	0.73
Karasumaru	烏丸	1.09
Katsu	勝	5.07
Kazanoin	花山院	0.04
Kazehaya	風早	9.93
Kigoshi	木越	8.78
Kikutei	菊亭	0.04
Kitakawahara	北河原	0.04
Kitakoji	北小路	2.51
Kitaoji	北大路	0.96
Kiyosu	清棲	3.78
Komeda	米田	1.02
Konoe	近衛	5.40
Koteda	籠手田	0.53
Kujo	九条	1.33
Kuni	久邇	6.69
Kushige	櫛笥	2.89
Kutsuki	朽木	0.69
Machijiri	町尻	0.04
Madenokoji	万里小路	0.80
Matsugasaki	松崎	2.27
Matsukata	松方	3.04
Mibu	壬生	0.49
Mimuroto	三室戸	0.04
Minamiwakura	南岩倉	0.04
Minase	水無瀬	3.73
Mitsukuri	箕作	4.18
Motoda	元田	2.71
Motono	本野	6.51
Muromachi	室町	7.60
Mushanokoji	武者小路	0.04
Mutsu	陸奥	2.42
Nagayo	長与	3.31
Nakanoin	中院	0.31

Nakanomikado	中御門	0.04
Nakijin	今帰仁	0.04
Nashiba	梨羽	0.69
Nijo	二条	4.04
Nire	仁礼	2.67
Nishigori	錦織	0.33
Nishiitsutsuji	西五辻	0.16
Nishikoji	錦小路	0.18
Nishinotoin	西洞院	0.04
Nishioji	西大路	0.40
Nshitakatsuji	西高辻	0.04
Nishiyotsutsuji	西四辻	0.20
Nonomiya	野宮	7.31
Nyakuoji	若王子	1.44
Ogyu	大給	6.96
Oinomikado	大炊御門	0.04
Oshikoji	押小路	0.38
Reizei	冷泉	0.04
Rokkaku	六角	0.04
Rokugo	六郷	2.96
Rokujo	六条	2.71
Sagihara	鷺原	1.51
Saionji	西園寺	3.18
Saneyoshi	実吉	4.82
Sanjonishi	三条西	0.04
Seikanji	清閑寺	0.04
Senge	千家	2.58
Senshu	千秋	2.58
Shibakoji	芝小路	0.04
Shibatei	芝亭	0.04
Shidehara	幣原	0.53
Shigenoi	滋野井	0.29
Shikazono	鹿園	1.00
Shimizudani	清水谷	0.04
Sonoike	園池	0.29
Sufu	周布	0.76
Takachiho	高千穂	2.13
Takatsukasa	鷹司	1.16
Takezono	竹園	4.07
Takiwaki	滝脇	7.51
Tamamatsu	玉松	0.96

Tanegashima	種子島	4.69
Tokiwai	常磐井	1.91
Tokudaiji	徳大寺	0.58
Tominokoji	富小路	0.16
Torio	鳥尾	3.20
Tsuchimikado	土御門	0.04
Tsugaru	津軽	6.40
Tsukuba	筑波	6.85
Tsurudono	鶴殿	0.07
Umekoji	梅小路	0.11
Umezono	梅園	7.29
Uramatsu	裏松	7.80
Uratsuji	裏辻	8.00
Uryu	瓜生	9.36
Usagawa	宇佐川	6.73
Uzumasa	太秦	0.04
Yanagiwara	柳原	0.04
Yasuba	安場	6.87
Yonekitsu	米津	0.04

A3: Kazoku Surnames

Surname	Hiragana	Kanji	FPM
Aburanokoji	あぶらのこうじ	油小路	0.18
Anbe	あんべ	安部	0.91
Anegakoji	あねがこうじ	姉小路	0.31
Arichi	ありち	有地	8.02
Asukai	あすかい	飛鳥井	5.31
Awataguchi	あわたぐち	栗田口	1.13
Ayanokoji	あやのこうじ	綾小路	0.71
Bojo	ぼうじょう	坊城	2.16
Chikusa	ちぐさ	千種	6.91
Chinda	ちんだ	珍田	9.07
Chosyo	ちょうしょ	調所	1.71
Dewa	でわ	出羽	0.80
Fujioji	ふじおおじ	藤大路	0.09
Fushihara	ふしはら	伏原	8.69

Futaara	ふたあら	二荒	0.04
Hachijo	はちじょう	八条	2.38
Hamuro	はむろ	葉室	8.42
Higashibojo	ひがしぼうじょう	東坊城	0.16
Higashifushimi	ひがしふしみ	東伏見	0.04
Higashikuze	ひがしくぜ	東久世	0.04
Higashisanjo	ひがしさんじょう	東三条	0.04
Hinonishi	ひのにし	日野西	0.91
Hirasa	ひらさ	平佐	6.78
Hitotsuyanagi	ひとつやなぎ	一柳	0.89
Hojo	ほうじょう	北条	8.31
Honami	ほなみ	穂波	6.27
Ie	いえ	伊江	5.80
Imasono	いまその	今園	3.40
Isahaya	いさはや	諫早	3.29
Isechi	いせち	伊瀬知	6.53
Ishiko	いしこ	石河	6.42
Itouzu	いとうづ	到津	0.04
Itsutsuji	いつつじ	五辻	0.93
Jikoji	じこうじ	慈光寺	1.89
Jimyoin	じみょういん	持明院	0.53
Kacho	かちょう	華頂	0.53
Kadenokoji	かでのこうじ	勘解由小路	0.04
Kajuji	かじゅうじ	勧修寺	0.22
Kanroji	かんろじ	甘露寺	0.73
Karasumaru	からすまる	烏丸	1.09
Katsu	かつ	勝	5.07
Kazanoin	かざのいん	花山院	0.04
Kazehaya	かぜはや	風早	9.93
Kigoshi	きごし	木越	8.78
Kikutei	きくてい	菊亭	0.04
Kitakawahara	きたかわはら	北河原	0.04
Kitakoji	きたこうじ	北小路	2.51
Kitaoji	きたおおじ	北大路	0.96
Kiyosu	きよす	清棲	3.78
Komeda	こめだ	米田	1.02
Konoe	このえ	近衛	5.40
Koteda	こてだ	籠手田	0.53
Kujo	くじょう	九条	1.33
Kuni	くに	久邇	6.69
Kushige	くしげ	櫛笥	2.89

Kutsuki	くつき	朽木	0.69
Machijiri	まちじり	町尻	0.04
Madenokoji	までのこうじ	万里小路	0.80
Matsugasaki	まつがさき	松崎	2.27
Matsukata	まつかた	松方	3.04
Mibu	みぶ	壬生	0.49
Mimuroto	みむろと	三室戸	0.04
Minamiiwakura	みなみいわくら	南岩倉	0.04
Minase	みなせ	水無瀬	3.73
Mitsukuri	みつくり	箕作	4.18
Motoda	もとだ	元田	2.71
Motono	もとの	本野	6.51
Muromachi	むろまち	室町	7.60
Mushanokoji	むしゃのこうじ	武者小路	0.04
Mutsu	むつ	陸奥	2.42
Nagayo	ながよ	長与	3.31
Nakanoin	なかのいん	中院	0.31
Nakanomikado	なかのみかど	中御門	0.04
Nakijin	なきじん	今帰仁	0.04
Nashiba	なしば	梨羽	0.69
Nijo	にじょう	二条	4.04
Nire	にれ	仁礼	2.67
Nishigori	にしごり	錦織	0.33
Nishiitsutsuji	にしいつつじ	西五辻	0.16
Nishikikoji	にしきこうじ	錦小路	0.18
Nishinotoin	にしのとういん	西洞院	0.04
Nishioji	にしおおじ	西大路	0.40
Nishitakatsuji	にしたかつじ	西高辻	0.04
Nishiyotsutsuji	にしよつつじ	西四辻	0.20
Nonomiya	ののみや	野宮	7.31
Nyakuoji	にやくおうじ	若王子	1.44
Ogyu	おぎゅう	大給	6.96
Oinomikado	おおいのみかど	大炊御門	0.04
Oshikoji	おしこうじ	押小路	0.38
Reizei	れいぜい	冷泉	0.04
Rokkaku	ろっかく	六角	0.04
Rokugo	ろくごう	六郷	2.96
Rokujo	ろくじょう	六条	2.71
Sagihara	さぎはら	鷺原	1.51
Saionji	さいおんじ	西園寺	3.18
Saneyoshi	さねよし	実吉	4.82

Sanjonishi	さんじょうにし	三条西	0.04
Seikanji	せいかんじ	清閑寺	0.04
Senge	せんげ	千家	2.58
Senshu	せんしゅう	千秋	2.58
Shibakoji	しばこうじ	芝小路	0.04
Shibatei	しばてい	芝亭	0.04
Shidehara	しではら	幣原	0.53
Shigenoi	しげのい	滋野井	0.29
Shikazono	しかぞの	鹿園	1.00
Shimizudani	しみずだに	清水谷	0.04
Sonoike	そのいけ	園池	0.29
Sufu	すふ	周布	0.76
Takachiho	たかちほ	高千穂	2.13
Takatsukasa	たかつかさ	鷹司	1.16
Takezono	たけぞの	竹園	4.07
Takiwaki	たきわき	滝脇	7.51
Tamamatsu	たままつ	玉松	0.96
Tanegashima	たねがしま	種子島	4.69
Tokiwai	ときわい	常磐井	1.91
Tokudaiji	とくだいじ	徳大寺	0.58
Tominokoji	とみのこうじ	富小路	0.16
Torio	とりお	鳥尾	3.20
Tsuchimikado	つちみかど	土御門	0.04
Tsugaru	つがる	津軽	6.40
Tsukuba	つくば	筑波	6.85
Tsurudono	つるどの	鶴殿	0.07
Umekoji	うめこうじ	梅小路	0.11
Umezono	うめぞの	梅園	7.29
Uramatsu	うらまつ	裏松	7.80
Uratsuji	うらつじ	裏辻	8.00
Uryu	うりゅう	瓜生	9.36
Usagawa	うさがわ	宇佐川	6.73
Uzumasa	うずまさ	太秦	0.04
Yanagiwara	やなぎわら	柳原	0.04
Yasuba	やすば	安場	6.87
Yonekitsu	よねきつ	米津	0.04