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ECONOMIC PERSISTENCE IN FACE OF ADVERSITY: EVIDENCE FROM KYRGYZ TRIBES THROUGH SOVIET TIMES

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Abstract

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Economic persistence in face of adversity: Evidence from Kyrgyz tribes through Soviet times

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Traditional institutions, tribes, clans, long-run persistence, inter-generational transmission, Kyrgyzstan.

Abstract

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1 Introduction

A large literature in development economics and economic history has shown the importance of institutions for the long-run economic development (see, e.g., Nunn 2009 for a review). In an important step towards understanding the determinants and functioning of institutions, Roland (2004) makes a useful distinction between fast-moving/formal institutions (such as, for instance, a political regime) and slow-moving/informal/traditional institutions (such as the caste system, social norms, and cultural beliefs). Political economics have made substantial progress in discovering how formal institutions change (see, for example, Acemoglu et al. 2005; Persson and Tabellini 2009). However, our understanding of traditional institutions remains quite limited.[1] In particular, a key problem in this literature is uncovering how these traditional institutions evolve and interact with formal institutions or top-down government policies.

This paper focuses on the traditional institutions of tribes and clans, i.e. large groups of people sharing a common identity based on common (real or imaginary) lineage. It is well known that these institutions play a major role in daily life in many developing societies (see, for instance, Nugent and Sanchez, 1993; Greif and Tabellini, 2017). Using a combination of rich historical and contemporaneous data sources from Kyrgyzstan, we study the persistent influence of the tribal-clanic institutions on household-level economic outcomes over a long run, in the face of highly adverse government policies.

More specifically, we document that, even after controlling for unobservable local effects, the economic well-being (measured with income and expenditures) of Kyrgyz households in 2012 strongly correlates with the early 20th-century average wealth measures of the tribes to which the household head belongs. Furthermore, the economic inequality among tribe members today correlates with the within-tribe wealth inequality in the early 20th century. This persistence is highly surprising, given the extreme redistributive and equalizing policies conducted by the Soviet government throughout the period from 1917 to 1991 (the collectivization drive, mass purges targeting the wealthy and the middle-class citizens, the virtual absence of private property, and subsidized/free access to education) and its campaigns to eradicate tribal and clan-based identity.

Next, we focus on the potential channels behind this persistence. The Soviet government's policies allow us to rule out the standard channel of transmission of wealth or other tangible assets. Thanks to the the local-level geographic fixed effects, we exclude that the observed correlation is driven by natural endowment differences (in location of tribes) or by geographic sorting. Focusing on the elder respondents in the contemporaneous data, we find some support for the channel of transmission of human capital and status. Even during the Soviet period, there is a positive correlation in the relative position in society that members of once-wealthier tribes reached, with respect to the type of occupation

[1] An important exception is the extensive analysis of the caste system by development economists (see Munshi, 2019, for a recent review of this literature).

(skilled / unskilled) and sector of activity (agricultural / non-agricultural), but not in terms of years of formal education. We also find evidence of significant differences in tribe-level cultural traits (in particular, we find a stronger attachment to traditional values among members of the once-wealthier tribes). Finally, combining our pre-Soviet data with the 1972-76 data on high-ranked politicians in the Kyrgyz SSR, we find that the once-wealthier tribes exhibit a disproportionally larger political representation in top positions. This suggests that another important channel of persistence is conversion of pre-Soviet wealth into political power under a regime highly restrictive of private property and wealth.

Besides the aforementioned literature, we also contribute to the branch of economics that studies inter-generational mobility (see, for instance, Clark, 2014; and Solon, 2018, for a brief review). This literature stresses several key channels of transmission of relative well-being across generations, such as investment in education, transmission of culture, and direct inheritance. However, because of data limitations, disentangling between these channels empirically remains very challenging, because these channels are not isolated (are correlated). So far, and because of this, most of the literature focused on wealth transmission as the principal "suspect". Instead, this paper exploits the historical setting where this most immediate/prominent channel was completely shut down by the Soviet state (in the form of wealth destruction (through the collectivization drive), aggressive redistributive policies, and complete re-organization of the production system).

2 Historical context

2.1 The Kyrgyz around 1910

Citizens of the Russian empire

The Kyrgyz people - a confederation of ethnically and linguistically close nomadic pastoralist tribes originating from the territory that currently corresponds to a part of Western Siberia and Western Mongolia - migrated into the territory of current-day Kyrgyzstan around 15th century CE. This massive migration was driven by a mix of military, political, and economic reasons: certain historians state that the war with Oirat tribes was the main reason for migration, whereas others sustain that the key reason was the desire to be better connected (and partially control) trade routes connecting China to Central Asia and Europe (Asankanov et al., 2017: 90-91). It is, however, beyond doubt that by the 16th century CE, the territory of the current-day Kyrgystan became stably populated by Kyrgyz tribes. In the early 16th - mid-18th century CE, the organization of Kyrgyz tribes consolidates into the three large groups of tribes. The first two - Ong Qanat ("the Right Wing") and Sol Qanat ("the Left Wing") - occupy the North, East, and Central Kyrgyzstan. The slightly less ethnically related Ichkilik ("the Inner") group occupies the territory of the Western Kyrgyzstan adjacent to the Ferghana valley.

Throughout the 18th century, the Ferghana valley Kyrgyz tribes gradually (and mostly because of inter-tribe conflicts that weakened them collectively) fall under the control of the Kokand Khanate, a powerful local kingdom, which in the early 19th century manages to extend its influence to the majority of the Northern Kyrgyz tribes (Rumyantsev, 1911a: 10). The internal power struggles in the 19th century, as well as the Russian expansion into Central Asia fed by geopolitical rivalry with the British Empire (the so called "The Great Game") weaken the Kokand Khanate. During this period, certain Kyrgyz tribes seek the protectorate status from the Russian Empire, and gradually all the Ong and Sol Qanat tribes come to be controlled by the Russian administration. The fall of the Kokand in 1876 completes the Russian military control of the entire territory of modern Kyrgyzstan.

The general strategy of the Russian Empire towards Kyrgyz territories was based on gradualism and to a large extent took into account the local institutional context. However, the administrative structure was such that the Kyrgyz tribes belonged to four different oblasts (regions) of the Empire and some authors argue that this division negatively affected the later consolidation of the Kyrgyz people into statehood (Asankanov et al., 2017: 96). The Russian administrative reforms (and in particular the introduction of local elections) gradually weakened to some extent the importance of traditional kinship institutions and of tribe leaders (the so-called manaps). The contemporary accounts attest to this: "Of course, at the start of the election-based governance, the key positions were held by manaps; still, these latter lost their unlimited control over the population. The power of manaps was thus strongly curbed. Each individual household head no longer considers himself as a vassal of the manap, but as an equal-right member of the volost and his possessions belong to him only, and not to the manap. Although manaps still exist among the Kyrgyz, but it is now a remnant of the past" (Rumyantsev, 1911a: 14). These kinship institutions, however, remained quite important well into the Soviet period.

The abolition of serfdom in 1861 triggered the process of peasant migration into Central Asia. This process started in Kyrgyzstan in the 1870s and accelerated in the 1890s. It was a massive process (initially spontaneous, and from 1889 regulated by the administration), so that by the end of the 19th century, the ethnic Kyrgyzs constituted only 60% of the population of the modern-day Kyrgyzstan territory. Russian peasants mostly settled on the land better suited for agriculture, first in the Northern Kyrgyzstan and later even in the Ferghana valley. The rising land pressure on the Kyrgyz tribes put under strain the nomadic pastoralist economic system, and over time a part of the Kyrgyz population started to rely more and more on sedentary agriculture. This process was further facilitated by some of the technological innovations brought in by Russian settlers, such as making hay for winter, which allowed to intensify the pastoralism, but required more stability and the permanent presence of at least some households on the winter pasture.

Clan-based social and economic life

According to historians and ethnographers, Kyrgyz society has very long been structured by a complex system of kinship networks, with several layers of identity and social aggregation. Each of the three above-mentioned tribal confederations (Ong Qanat, Sol Qanat, and Ichkilik) consisted of several tribes (uruu), which themselves were divided into clans (uruk), and sub-clans. Each of these units corresponded to a group of households whose male descendants belonged (or at least believed to belong) to the same lineage. Notably, within each clan, there was a clear hierachy of sub-clans (usually, the descendants of the elder brothers at each level were considered to be more important/powerful than those of the younger brothers). Each clan was headed by an elderly male (called manap), and the council of manaps of all the clans jointly ruled the tribe.

Rumyantsev (1911) notes that until the end of the 19th century, "A manap ruled the group, defended in front of other manaps the interests of his bukara (the poorer relatives), helped it in the hardship years (during a jut, after the attacks by other neighboring manaps, etc.); the bukara had to work for its manap, and its poorest part was in total economic dependence from the manap" (Rumyantsev, 1911a: 88).

This traditional kinship structure influenced every aspect of social, economic, and political life of Kyrgyzs. The majority of important production decisions (e.g. the access to land, migration/transhumance timing), social behavior, and political actions (defense/offense, settlement of large-scale land disputes) were in the hands of the clans and clan elders.

A clan actively intervened in and regulated the social behavior of its members. The socialization of the young generation into the norms of behavior was done not only by their parents and the close members of the family, but also by the sub-clan and clan members; an important part of this socialization involved passing the knowledge about the clan identity and the genealogical structure of the clan, the tribe, and the wing. The minimum knowledge of the history involved knowing the names of one's ancestors up to the seventh generation, but usually a more extended knowledge of the clan's past (in particular, its relations with other clans and tribes) was strongly encouraged (Asankanov et al., 2017: 332-333). The marriage and family formation decisions were also often affected by clanic considerations. For instance, marriage was often used as a way of reinforcing the strategic relationships and alliances between clans (Asankanov et al., 2017: 292).

The clan played a major economic role as well. Although the arrival of the wave of Russian peasant settlers triggered the start of a decline of nomadic pastoralism, the seasonal migration (between winter and summer pastures) still prevailed at the early 20th century and were traditionally based on extended families and clans. Livestock (mainly horses, sheeps and goats) was the private property of individual households, but pasture land (both in winter stops and in summer pastures) was owned by larger kinship groups. Individual households were grouped into the extended families who spend the winter

jointly in the valleys. Extended families were headed by a patriarch and consisted of several nuclear households typically headed by his sons, younger brothers, and sometimes more distant relatives. Extended families had the use right over land at the winter stops. In the summer, the extended families migrate to higher-altitude pastures and met with other extended families usually belonging to the same clan. The summer pasture land was usually a closed-access common property of the clan. At the winter stops, extended families practiced some agriculture.

An extended family typically was composed of both rich and poor households. The richer household was usually that of the extended family patriarch. Notably, the wealth inequality could be quite large within the extended family, whereby rich family heads had some responsibility for their impoverished relatives. These were patron-client relationships where rich households offered protection and survival for the poorer members in exchange for labor services (usually involving taking care of the livestock) (Boyanin et al., 2009: 15).

Disputes over pastures were extremely common, especially as the land pressure from Russian settlers started to increase. Tribal and clanic institutions (such as the councils of elders) were mobilized to settle these conflicts, upon which the tribe and clan leaders would negotiate or decide to fight. In the case of fighting, the leadership could count on the immediate mobilization of all the male members of the clan or the tribe. These conflicts and settlements occured at multiple levels. Sometimes, such conflicts were very limited in space and concerned specific winter pastures; in such case, they would oppose two sub-clans of the same clan. However, in other occasions the disputed area was much wider or concerned large summer pastures. In that case, the above-mentioned sub-clans would unite and fight the members of another clan. The famous Arab saying "I against my brother; I and my brother against my cousin; I and my brother and my cousin against the world" applied perfectly to the Kyrgyz nomadic-pastoralist context.

Towards the end of the 19th century, the Russian Empire fully converted the protectorate into a colony, by decreeing that virtually the entire land of Kyrgyz territory belonged to the Empire. Nomads were "granted" the usufruct rights over winter and summer pastures (but not over the transhumance routes); these rights could be inherited but not sold (Asankanov et al., 2017: 101).

The intensity of the rising pressure led to anti-Russian revolts, the most violent of which occured in 1916. It covered most of the Norether Kyrgyzstan and spilled over into pillaging the peasant settler villages. The Empire sent massive military forces, and by the fall of 1916, the revolt was repressed. The persecutions induced a large number of Eastern Kyrgyz families to flee into China over the mountains. The extreme weather conditions had a huge human toll: according to some historians, almost 140 000 people died while fleeing (Asankanov et al., 2017: 105). The persecutions stopped in 1917 because of the fall of Tsarism.

2.2 Soviet period: collectivization, dekulakization, and the compression of inequality

The 1917 Revolution was not warmly welcomed by the Kirghiz people. During the 1918-1920 Civil War period, the rich tribe and clan leaders supported White Russian military groups, fearing expropriation by Bolsheviks. On the other hand, Bolsheviks tried to gain the trust of the poorer part of the local population and launched several land redistribution reforms. These reforms that started in the early 1920s were initially very limited and had only mixed success, as they clashed with the deeply ingrained patron-client networks within the Kyrgyz clans. The poor clan members did not want to become individual owners of land fearing the loss of access to the clan networks; hence, many handed back their land plots to the richer clan members.

The reforms of the late 1920s were much more aggressive and involved the collectivization of all the land and livestock. At the top of the Soviet Communist party apparatus, Stalin and his main supporters feared that the potential separatist movements in the Central Asian republics might lead to alliances of the "middle-class" indigenous population with Russian kulaks.[2] This aggresive party line was followed to the letter by the local party heads, who tried to eliminate this threat by implementing the collectivization in the harshest possible ways, targeting in the collectivization drive even the relatively poor households, extending the definition of the "rich" to include these households. Local party heads competed with each other to show maximum zeal in implementing the collectivization policy rapidly and efficiently and to declare to the center the largest possible numbers of households whose livestock was expropriated and incorporated into kolkhozs. The family heads of these households typically were exiled to Siberia. By 1935, 85% of the all the land in Kyrgyzstan suitable for agriculture was collectivized.

An important feature of the collectivization in Central Asia was that, in contrast with Russian peasants, the poor strata of indigenous people in Central Asia were not convinced by the benefits of collectivization. They saw this policy more as a threat to the well-established (and familiar) patron-client clan and kinship system, with clear personalized exchanges and obligations; they felt that collectivization and exile of the rich implied for them the loss of their powerful "patrons", in exchange for an ill-defined "collective" (or, rather, State) property of the livestock.

Historical accounts attest to the fact that the inter-tribal relationships and rivalry took new forms during the early Soviet period. Junushaliev (2003) notes that in the early 1920s, the tribal factions (of Solto, Bugu, Sayaq, and Sari-bagish tribes) within the newly formed State organizations engaged in bitter conflicts, provoking the arrests and expulsions from the territory of the republic of faction heads. A Communist Party report of 1926 concerning the weaknesses of the Soviet apparatus in Kyrgyzstan

[2]Kulaks were peasant wealthy enough to own land and hire labour. In Russia, they resisted Stalin's collectivization and millions of them were arrested, exiled or killed during the "purges".

states: "One should note the existing tradition of rotation of chairmanship (of volost-level and village-level Soviet councils) between different clans. Let's suppose that in the previous elections the chairman was a member of one clan; then, in the current elections, it has to be a member of another clan... If the clan heads fail to agree about this [rotation], then the struggle starts..." (cited in Junushaliev, 2003: 101). This and similar reports regularly mention that the clan loyalty and inter-clan rivalry are the main aspects of the local political power during the 1920s in Kyrgyzstan.

The collectivization drive in Central Asia had an extremely strong equalizing factor on the wealth distribution. As noted above, the local party leaders' zeal in showing results implied strong targeting of rich members of society. This first and foremost implied that the clan leaders and their households (overall about 500 households in Kyrgyzstan) were singled out for the confiscation of their wealth and for exile (into Siberia and Ukraine). Sarsenbaev (2013) notes that this campaign was a preventive attack on the clan elites - manaps that because of their authority, respect of the overall population, and the resources that they could leverage could have hampered the implementation of the general collectivization drive. The clan structure received an additional blow in the fact that the collectivization policy in Kyrgyzstan explicitly forbid that during the sedentarization, the villages formed on the kinship basis (Junushaliev, 2003: 129).

This set of policies was a huge shock to the economic system of rural Kyrgyzstan. The break-up of the social structure that the expropriation and the exile of the manaps, who effectively were the "managers" of the traditional economic system, coupled with the poorly organized kolkhoz system and the generalized lack of trust of the population led to a dramatic drop in agricultural productivity and massive famine in 1932-1933. This was aggravated by the in-migration of Kazakh families escaping an even more severe famine driven by the same factors (historians claim that more than 100 000 in-migrants from Kazakhstan arrived to Kyrgyzstan in the early 1930s). Yet, facing these massive social problems, the party rule only insisted in tis ideological drive. For instance, a local head of party that refused to send grain to the center, to avoid an even worse catastrophy, was executed.

The resulting impoverishment of the population implies that many peasants became day workers, which further decreased productivity. The aggregate amount of livestock in 1936 was barely a half of what it was in 1928, the last year before the collectivization drive, and the situation in agriculture was similarly disastrous.

The Soviet state apparatus conducted active policied against clan-based institutions. Clan identity (recorded by the pre-Soviet scholars and statisticians) was suppressed in the studies and data collected in the Soviet period. Already in the mid-1920s, certain Soviet scholars, willing to show the success of the Communist social transformations, claimed that tribal-clanic institutions were disappearing from the social life of the Kyrgyz (Junushaliev and Ploskikh, 2000). The fundamental role played by secular, centralized, and accessible formal education went together with the official line that pre-Soviet traditions were considered as backward and, at best, had to be reserved for the rural elderly. The traditional

milestone ceremonies (such as marriages and funerals) were maintained but deeply transformed under the Soviet ideological pressure. For instance, multi-day family feasts that involved slaughtering of animals were formally banned. The religious dimension of such ceremonies was repressed or eliminated. Generally, in the Soviet period, the popular culture of the Kyrgyz people was developed along the dominant State ideology whose objective was the leveling of national ethnic features and the creation of a new community of people along the Communist idea. On surface, the majority of traditional social norms and structures was completely lost; however, in the years of post-Soviet transformation, many elements of this past life were reborn in new historical conditions (Asankanov et al., 2017: 501).

Although under the Soviet regime, Kyrgyzstan made substantial progress in terms of industrialization, the fact that most of its economy was still largely based on agriculture and raw material extraction sectors, coupled with the general inefficiency of the Soviet economic system implied that in economic terms, the country marginal in the USSR. In 1979, Kyrgyz SSR was the second-poorest republic in the Soviet Union (Anderson, 2013).

A key aspect of the Soviet economic system and the above-mentioned policies was that, as in the rest of the USSR, income and wealth inequality was highly compressed. To a large extent, this was driven by the collectivization drive, as explained above. In addition, the state regulation of the labor markets, guaranteed minimum income and employment, and generalized access to education served as a strong equalizing factors. In the post-Stalin period, there were some tendencies (especially in the agricultural sector) that led to a certain divergence of incomes, in particular, between kolkhozs (Khan and Ghai, 1979); however, these differences were still relatively small, and clearly within-kolkhoz income and wellbeing differences were strongly compressed.

2.3 Kyrgyzstan in 1990-2010: Independence, democratization, and development of the market economy

The break-up of the Soviet Union in 1991 triggered (or, rather, aggravated) a deep economic crisis in all the ex-Soviet republics. Among them, those at the "periphery" of the Union (such as Kyrgystan) were particularly affected. This occured mainly because of the structure of the Soviet economy, under which the production was organized in networks linking various large state-owned enterprises, with early stages of the supply chains (e.g. extraction of natural resources and the first stages of processing) took place mostly at the periphery, whereas last stages of production and assembling into final goods took place in the center (Moscow oblast and other main areas in the European part of the Russian Federation). In addition, most supplier firms were quite large and served multiple later-stage firms. As argued by Blanchard and Kremer (1997), the break-up and the resulting removal of central planning, the newly independent and privatized firms entered into a highly complex process of decentralized bargaining, with severe informational asymmetries, aggravated by the legal vacuum of multiple new

jurisdictions. The failure of such complex bargaining that followed generated the breakdown of numerous economic relations. Consequently, these ex-state firms and their employees found themselves with virtually no effective demand for their goods. Most of these firms went bankrupt and lost most of their (often skilled) personnel, which - in Central Asian republics - reverted to small-scale "shuttle" trade (i.e. buying and re-selling consumer goods imported from China, Turkey, and Iran).

Unsurprisingly, this economic crisis led to a sharp rise in poverty. Milanovic (1998) notes that the poverty headcount ratio in Kyrgyz Republic in 1993 stood at 86%, the highest among all the transition economies. Naturally, the population massively relied on informal networks for mutual assistance in this period of hardship. However, the study by the World Bank in 1996 (Kuehnast and Dudwick, 1996) find that during the transition period, the density and the type of social networks diverged in Kyrgyzstan. In particular, those of the poor became less dense because they could not afford participating in network-building or network-maintaining events and gift-exchanges. Moreover, the nature of the social networks changed differentially. Among the non-poor, it relied ever more on economic interest (such as, for example, links serving to secure credit), whereas for the poor, it became less horizontal/egalitarian (as it was under the Soviet Union, with its *blat* system) and more of the patron-client nature, as the poor became more dependent of the assistance provided by their non-poor relatives and friends.

The political independence acquired in 1991 and the trajectory of democratic reforms that followed evolved along highly interesting dynamics. On the one hand, and perhaps for the first time in Kyrgyz history, genuinely competitive elections emerged as the means of allocating political power and making collective political decisions. Other measure of democracy improved as well. Collins (2002) writes, for instance: "The early years of the transition not only saw basic freedoms of speech, the press, and assembly outlined but also witnessed the creation of an independent judiciary and a representative legislature, as well as the adoption of legal protections for property rights. What did not happen was noteworthy as well: There were no outbreaks of angry ethnonationalism and no military coups or other armed interventions in politics. Between 1991 and 1995, there were free and fair local, parliamentary, and presidential elections. There emerged an active civil and political society, albeit one largely restricted to well-educated city dwellers. In just a few years, Kyrgyzstan had become a semi-liberal democracy."

On the other hand, the collapse of the Soviet state institutions at the local level, with the weakening of underpaid State law enforcement staff and the emergence of organized crime, as in most ex-Soviet republics, led to rising violence in such vacuum of power. In addition, the de facto political and economic power allocation gradually became ever more personalized. As Engvall (2007) notes, "During the formative period of economic and political restructuring under Akaev [the first president of Kyrgyz Republic], enrichment and political connections became synonymous. Because such a large portion of the country's business assets was consolidated in the hands of the presidential family, one of the

few means available for building up power structures beyond the reach of the ruler's tentacles was by organizing illegal businesses, mainly in rural areas where the central government had never made its presence felt. In other words, for individuals who had no personal ties to the state, involvement in organized crime was the closest substitute for acquiring economic profits." The Tulip Revolution of 2005 that overthrew Akaev and the subsequent political instability led to aggressive elite competition for power. After 2005, at the level of competition for presidency, the rivalry among political factions prevented the stable monopolization of political power. In 2010, another president (Bakiev) was ousted after violent protests broke out, and although the 2017 elections occurred peacefully, in 2019, the ex-president Atambayev was arrested on charges brought about by his successor, after several weeks of massive violent confrontation .

At the parliamentary and local political level, several authors highlighted the key role that clans played as a basis for political entrepreneurship. Radnitz (2010) analyzes the instrumentalization of local (including, but not exclusively, clan-based) networks by elites in organizing mass mobilization and protests, through what he calls 'subversive clientelism'. Ismailbekova (2017) builds a detailed account of how both real and putative kinship ties are used and nurtured by local political entrepreneurs to construct patron-client relations that shape the economic and social life at the sub-national level. The main insight that emerges from these studies is that clanic identity is a rich and malleable resource that can be skillfully exploited by political entrepreneurs in the contest for power.

3 Data: A panel of clans 1910-2010

Our data sources can be divided into three groups: historical pre-Soviet data from Russian colonial expeditions, the Soviet data (1953-1955 expeditions and the 1972-76 data on local politicians in the Kyrgyz SSR), and the post-Soviet "Life in Kyrgyzstan" household survey of 2010-2016. Below we provide the detailed description of each dataset, and the matching challenges and procedure that we used in constructing our panel.

3.1 Historical pre-Soviet data (1910s)

Our main sources of historical information concerning the clan outcomes at the beginning of the 20th century are the materials of two Russian colonial expeditions, conducted between 1907 and 1913.[3] These expeditions were organized and financed by the State Department of Land Use and Agriculture (GUZiZ), with the main objective of estimating the amound of land suitable for agriculture that could be made available for settlers from the European part of the Russian Empire. The Rumyantsev

[3]For more information about the expedition materials, see Aldashev and Guirkinger (2012) and Guirkinger and Aldashev (2016).

expedition covered the Semirechie oblast (region) of the Empire (roughly corresponding to the South-Eastern part of the current-day Kazakhstan and the Eastern half of Kyrgyzstan). The Skryplev expedition covered the Syr-Darya oblast (region) corresponding to the Southern Kazakhstan and the Western half of Kyrgyzstan. We used the historical maps to identify the uezds (provinces) of each expedition that fall into the territory of the current-day Kyrgyzstan. These are: the Southern part of the Pishpek uezd and the entire Przhevalsk uezd, for the Rumyantsev expedition; the Southern part of Aulieatinsk uezd, most of Andizhan, Namangan, Osh, Skobelev, and Kokand uezds, for the Skryplev expedition).

These materials (Rumyantsev, 1916a; Rumyantsev, 1916b; Skryplev, 1911; Skryplev, 1913a; Skryplev, 1913b; Skryplev, 1915) provide detailed information, at the level of extended families (small confederations of kinship-related households that live and move together throughout the year) and communes (groups of extended families that jointly manage summer pasture land). They contain a large number of variables concerning the composition of families, their socio-economic well-being (in particular, livestock wealth), agricultural production, and participation in labor and product markets. Most importantly, they include information on kinship (sub-clan names) of each extended family, which allows us to construct the tribe-level measures of population, average wealth and wealth inequality.

To construct measures of material well-being in the past we rely on two main variables, available at the extended family level: livestock ownership per capita (expressed in adult horses equivalent) and cultivated land per capita. As livestock rearing and farming were the two main sources of income in 1910, these variables capture the family's level of productive capital. We also build a unique index of wealth for each extended family, by aggregating the two types of capital after normalizing (substracting the sample average and dividing by the sample standard deviation). Averaging over extended families of each tribe yields a measure of tribe's wealth, expressed in z-score.

A notable feature of this data is that we observe substantial wealth heterogeneity within tribes. This indicates that the main units of the social structure were not homogeneous egalitarian associations of households, but rather complex hierarchical organizations. For instance, scholars of the time describe extended families as consisting of a few wealthy households, who acted as patrons to a larger number of poorer (or even impoverished) households, typically related to them by kinship ties. This is an important feature, in the light of the (re-)emergence of patron-client networks at the local level in the current-day Kyrgyzstan, as explained in Section 2.3.

Figure 1 shows the approximate location of the pastures of all the major Kyrgyz tribes in the early 20th century. One can clearly see that there are large areas where the pastures of several tribes overlap. In other words, there is no clearly marked geographic separation of tribes, as one would expect for fully sedentary peoples.

3.2 Soviet data

The Soviet period data on social and economic outcomes, especially for Central Asian countries, is notoriously scarce. In addition, doubts can be raised concerning its quality. Hence, we rely on two sources from this period. The first are the materials of the ethnographic expedition, well-known for the care in their construction and the scholarly reputation of its head. The second are the administrative data on biographies, intended mostly for the internal use of the Communist party.

Materials of the ethnographic expedition of 1953-1955

In 1953-55, an ethnographic expedition headed by prominent Soviet orientalists, Prof. Saul Abramzon, and Dr. Yakov Vinnikov (respectively, for Northern and Southern Kyrgyzstan) studied the tribal composition of Kyrgyzstan, using a carefully constructed combination of historical materials and first-hand collection of qualitative data from several hundred elderly respondents with a good knowledge of tribal history of various parts of the country. The materials of this expeditions were published in 1956-1960 (Vinnikov, 1956; Abramzon, 1960). They consist of the detailed history of each of forty major tribes, their genealogical trees (divisions into clans and sub-clans), as well as the information about the geographic location of people belonging to all the clans of each tribe around 1950.

We use this data in two ways. First, we rely on the genealogical trees of this expedition to match the clans (both in the pre-Soviet and post-Soviet data) to tribes, as explained below. Second, using this data, we associate each village reported in this expedition to a tribe, which later allows us to associate (probabilistically) Kyrgyz politicians of the 1970s to tribes.

Biographies of MPs of Kyrgyz SSR, 1972-1976

The main source of power in the Soviet Republics lied with the Central Committee of the Republican branch of the Communist Party. However, considerable privileges (although very limited political power) were given to the Supreme Soviet (the Republican Parliament), whose 450 members were elected. Starting 1972, the published biographies of the Supreme Soviet members contain detailed information on their place of birth.

We use data from the official publications of 1972 and 1976 legislatures (i.e. the two volumes containing information on the place of birth that we could easily get access to). Matching this data with detailed maps of tribes and the materials of the ethnographic expeditions of 1950s, we attribute to each member his/her tribe (if there are several tribes present at the place of birth, we weigh the probability to belong of each of these tribes with the share of the tribe in the population of the place).

3.3 Post-independence data ("Life in Kyrgyzstan")

Our source for the current-day economic outcomes is the "Life in Kyrgyzstan" (hereafter, LiK) dataset. The project of building this dataset included several institutions in Central Asia and Europe with the German Institute for Economic Research (DIW Berlin) as the consortium leader. It is a research-based, open access, multi-topic longitudinal survey of households and individuals, containing information for 3000 households and about 8000 individuals. LiK is nationally representative (in covers all the 7 oblasts and 2 main cities in Kyrgyzstan). The study has been (so far) conducted in five waves (2010, 2011, 2012, 2013, and 2016). About 75% of respondends are ethnic Kyrgyzs, 15% are ethnic Uzbeks, and the rest is a combination of Russians, Kazakhs, Ukrainians, etc.

This survey interviews all adult household members about household demographics, assets, expenditure, migration, employment, agricultural markets, shocks, social networks, subjective well-being, and other topics. Certain topics are only addressed in selected waves. We use the 2012 wave, because it contains a section on custom and traditions, and - more specifically - a question about the tribal/clanic belonging of the household head.

For the measures of economic well-being, we use income per capita within the household, as well as the expenditure per capita. To reduce the noise that might arise because of the short-run fluctuations in income or expenditure, we take the averages across the three years (2011, 2012, and 2013). We also build normalized measures of income and expenditure (z-score) by substracting the corresponding sample average and dividing by the standard deviation.

The dataset also contains measures of asset ownership and human capital. For asset ownerhsip, we use the variables on land ownership (any land owned, land area owned per capita, and irrigated land owned per capita). We also build a composite asset that aggregates all household assets recorded in the survey using principal component analysis.[4] For measures of human capital, we rely on the years of education completed, height, body mass index (BMI), the birthweight of the first-born (for women respondents aged 25 or above), and fertility (for women aged 40 or older).

In addition, to construct our proxies for the relative social status during the Soviet period, we use measures of education of fathers of men, their occupation (skilled/non-skilled), and the sector of their occupation (agricultural/non-agricultural), as well as whether they were in the top quintile in terms of the prestige of their occupation. We focus on men's fathers, as tribal identity is transmitted from fathers to sons (given that the survey recorded the tribe of household heads - overwhelmingly men - only the tribe of men's fathers is known).

[4]The asset categories include properties, vehicles, domestic appliances, furniture, media appliances, communication devices, livestock and housing caracteristics. For each item, the survey recorded whether the household owned it. We build an index using the first principal component, separately for urban and rural households.

3.4 Matching across datasets

The primary unit across which the matching between historical and current data is the tribe. However, there are some caveats. The tribal-clanic structure of the Kyrgyz society is hierarchical and complex. The Kyrgyz people is divided into three wings (level 1): the Right wing (он), the Left wing (сол) and the Internal tribes (ичкилик). Each wing is further divided into several tribes (level 2), which are in turn further split into clans (level 3) and sub-clans (level 4).

Both the historical expeditions data and *Life in Kyrgyzstan* survey (its 2012 wave) contain information on clan belonging (respectively, of the extended family and the household head). However, the clan belonging is reported at different levels. Most respondents of the LiK provided information at the tribe level (level 2), with a smaller share reporting their clans (level 3). In the historical expeditions data, extended families reported mostly the lower-level information (level 3 or 4), i.e. the clan names, but there is no information on the tribe. Therefore, the kinship data is aggregated at different levels in 1910s and in 2012. Given the difference in aggregation between the historical and current-day data, we need to aggregate the 1910 clan-level information to tribes, to match them with the 2012 data (i.e. to have a common denominator between the past and the present). The primary source of information to match the clans with tribes is the expedition of the Soviet historian and ethnographer Saul Abramzon, conducted in 1949-1950. During this expedition, he recorded the information on tribal genealogical trees across the Kyrgyz SSR by conducting interviews with the elderly people of different Kyrgyz tribes. We use the materials of the Abramzon and Vinnikov expeditions (Abramzon, 1960; Vinnikov, 1956) to match up the clan names of the 1910s expeditions to the tribe names. Further details of the matching procedure are explained in the Appendix.

Overall, the total of 8636 extended families in the historical expeditions data is composed of both ethnic Kyrgyzs and Kazakhs. This occurred because during the pre-Soviet times, two large uezds (Aulieatinsk and Pishpek) covered the territory of both the current-say Southern Kazakhstan and Northern Kyrgyzstan. The clan belonging of about 90% of extended families was recorded by the expedition interviewers. Of these, we were able to match 64% to a Kyrgyz tribe. However, once we restrict our analysis to volosts that lie strictly within the borders of the current-day Kyrgyzstan, we are able to match the clan names of about 96% of extended families (about 5000 units) to one of the Kyrgyz tribes.

For the LiK dataset, 80% of ethnic Kyrgyz respondents reported a tribe (or clan) name. We were able to match 91% of this information (corresponding to about 1300 households) to one of the 37 major Kyrgyz tribes. The remaining 9% are either cases where the corresponding name of the clan was not found in the Abramzon expedition materials, or when the clan name is not unique (it may refer to clans of different tribes).

4 Persistence of material well-being over a century

4.1 Tribe wealth in 1910 and individual/household outcomes in 2012

Empirical strategy

To investigate the link between individual/household outcomes in 2012 and the wealth of the household's tribe at the start of the 20th century, we run simple linear regressions where the dependent variable is an individual (or household) outcome obtained from the LiK survey and the tribe wealth in the 1910s serves as an explanatory variable. We thus estimate the following model (where the variable Y_{itg} is the outcome of interest for individual i, belonging to tribe t and living in area g, the vectorX_i includes individual characteristics (such as age) and X_t the tribe characteristics in the past):

$$Y_{itg} = \alpha' X_i + \beta' X_t + \varepsilon_{itg} \tag{1}$$

To account for the fact that tribes have different sizes (see Section 3) and that averages (included in X_t) are computed over different numbers of extended families for different tribes, we weigh the observations by the size of the tribe in the past. Standard errors are systematically clustered at the tribe level.

An intuitive channel for the persistence of tribe's material well-being is geography. If regions differ in their natural endowments (climate, land productivity, connectedness to other regions, etc) and migration was relatively limited, then those living in the better-endowed regions have better economic opportunities, which also holds for their ancestors.[5] Under this scenario, the correlation in material well-being between 1910 and 2012 would require no mechanism of inter-generational transmission and rely uniquely on the region of residence. To control for this channel of persistence, we include neighbourhood fixed effects (γ_g) in the above model:

$$Y_{itg} = \alpha' X_i + \beta' X_t + \gamma_g + \varepsilon_{it} \tag{2}$$

This is our prefered specification. It allows to mute the geographical channel of persistence since the identification of the coefficients β is based on the comparison of individuals living in the same geographic area/neighborhood but belonging to different tribes. There are 108 neighborhoods in the 2012 sample. They correspond to a village in rural areas and to a town quarter in urban areas.[6]

[5] This reasonning also assumes that the change in the structure of the economy has not radically changed the ranking of regions in terms of the "natural" advantages they offer.

[6] These neighborhoods are the primary sampling units from which the 2010 sample was drawn. The average number of tribes represented in the same neighborhood is 3.8, corresponding on average to 13 households. In 20 neighborhoods, only one tribe is represented.

To measure tribe wealth in the past, we use the variables introduced in Section 3.1: per capita area cultivated (either in *desyatinas* or normalized), per capita livestock (either in adult horse equivalent or normalized) and a composite index that averages per capita area cultivated and per capita livestock, both expressed as z-scores.[7] With these indicators of past wealth, we estimate persistence on two sets of the present-day outcomes. First, we use indicators of material well-being: income, expenditure, asset ownership, and measures of human capital in 2011-13. Second, we go back one generation and estimate whether the respondent's parents fared better (under the Soviet system) if they belonged to a once-wealthier tribe. As measures of parental outcomes, we rely on years of education and the type of occupation. The descriptive statistics for all the variables used in the analysis are provided in Table 1.

Individual well-being in 2012 and past tribal wealth

Tables 3 and 4 present the results of the estimations of equations (1) and (2), respectively, with income and expenditure as dependent variables. Each table includes three panels corresponding to different measures of past tribe wealth. In both tables the first two columns report the estimated effect of past tribe wealth on normalized income and expenditure while the last two columns use income and expenditure expressed in the local currency (Kyrgyz som). Table 3 suggests that there is a remarkable persistence in average levels of material well-being over the century and Table 4 reveals that this persistence cannot be explained by geography alone: while coefficients are smaller once we include neighborhood fixed effects, they largely remain statistically significant and economically important. For example, the results reported in column 1, panel 1 of Table 4 indicate that one standard deviation of tribe wealth in the past is associated with a 0.2 standard deviation of income today. Area cultivated and livestock holding in 1910 do not have the same influence on current day outcomes: the second and third panel of Table 4 indicate that only the area cultivated has a statistically significant effect on both present-day income and expenditure. The coefficient on normalized livestock is slightly smaller and statistically insignificant in the income equations (columns 1 and 3) and close to zero (or negative) in the expenditure equations (columns 2 and 4). In the rest of the paper, we present only estimations including neighborhood fixed effects.

Table 5 reproduces the analysis using indicators of asset holdings as dependent variables. In the first column, the dependent variable is an index of durable assets ownership, based on the principal component analysis (including all durables recorded in the survey and the characteristics of the dwelling). Columns (2) to (4) focus on land ownership. In column (2) the dependent variable is a binary variable indicating whether the household owns any land (80% of the sampled households report to own some land). In column (3) the dependent variable is land owned per capita (in hectares) and in column (4) - irrigated land owned per capita. Asset ownership is positively correlated with tribe wealth in the

[7] One *desyatina* is equivalent to 1.09 hectares.

past even if the estimated coefficient is statistically significant only for the past wealth index (column 1, panel 1). In contrast, land ownership is negatively correlated with tribe wealth in 1910: members of tribes who cultivated larger areas in the past own less land today. We come back to this result in Section 5 below.

Table 6 report the results for human capital indicators in 2012. Measures of human capital include years of education, height, body mass index (BMI) and birthweight. Recalling that the tribal identity is reported only for male respondents, we focus on males for education and height levels. These outcomes are largely driven by parental investment and, due to a relatively well-respected tribal exogamy rules, women are likely to have grown up in a tribe different from that of their husbands. We include women in the BMI regression, as the body mass depends on the current level of nutrition. Birthweight was recorded for each child born to a female member of the surveyed household. To avoid birth order effects, we focus on the birth weight of first-born children. Past tribe wealth (of the husband's tribe) appears strongly positively correlated with the BMI and birthweight, but not with education and height. In the education regressions (column 1), the coefficients on variables capturing past tribe wealth are small and statistically insignificant. Male heights (column 2) appears positively correlated with land ownership, but negatively correlated with livestock ownership in the past (although the coefficient is significant only when we use the normalized measure of livestock). In contrast, body mass index (column 3) and birthweight (column 4) are strongly and positively correlated with past tribe wealth. For example, one standard deviation increase in tribe wealth in 1910 translates into an additional 120 g in newborn weight in the present (column 4, first panel). This last result may be in part driven by a Beckerian quantity / quality trade-off (although focusing on first-born alleviates this issue to some extent): women who married to a once-wealthier tribe member tend to have fewer children (column 5).

Going back one generation, parental outcomes and past tribe wealth

The 2012 survey includes information on the parents of respondents, which allows us to investigate whether past tribe wealth also correlates with individual outcomes for the parental generation. As most of these parents grew up under the Soviet regime, this data offers a unique opportunity to compare tribes in a period where the mere mentioning of tribes and clan was considered a taboo (see Section 2.2). As tribal identity is known only for fathers of male respondents (due to the exogamy rule), we restrict the sample of parents to these fathers. We again apply the strategy described in Equation (2) for the available indicators of fathers' relative position in society. The survey recorded the year of birth of parents, their education level, their type of occupation, their sector of occupation, and the highest position they held in their last job. We thus build variables capturing the fathers' years of education, whether they worked in an unskilled job, whether they specialized in agriculture, and whether they were in the top quintile in terms of the prestige of their position in their last job (the variable labelled

"good position"). Note that agriculture was viewed as a sector with a low social prestige during the Soviet period (Rutland, 1993).

Results are presented in Table 7 and in Table 8. The latter table futher restricts the sample to fathers born before 1965 and therefore entered their professional life under the Soviet regime. The results on education in Table 7 are similar to those obtained above: the coefficients on past tribe wealth are small and insignificant, suggesting that there is no correlation between past tribe wealth and years of education. This is less true for older fathers, however (Table 8): while still statistically insignificant, the coefficient is large and positive (in the first panel, for example, it suggest that one additional standard deviation in past tribe wealth is associated with one additional year of education). Regarding occupation, members of wealthier tribes in the past were significantly less likely to have an unskilled job and less likely to be employed in agriculture. For example, column (2) of Table 7 suggests that an additional standard deviation in past tribe wealth is associated with a decrease of 11 percentage points in the probability of being in an unskilled occupation (for fathers of respondents). These effects are even stronger for older fathers (a 21 percentage point lower probability in Table 8). As for the top of the distribution of occupational status (columns (4)), it is positively correlated with past tribe wealth, but the coefficient is statistically insignificant (and the coefficient is smaller for older fathers). In short, even during the Soviet period, there seems to be some positive correlation in the relative social position that members of wealthier tribes held, at least with respect to the type of occupation (skilled / unskilled) and the sector of activity.

4.2 Intra-tribe inequality in 1910 and in 2012

The analysis above shows that the average tribal prosperity ranking persisted over the 20th century. The granularity of the data allows us to go beyond these averages and investigate the persistence of inequality within tribes.

Figure 2 presents the distribution (kernel density) of cultivated area per capita in 1910, separately for each of the five largest tribes. The profile of these distributions appear quite different across tribes, in particular in terms of the width and height of the bell curve, suggesting that tribes experienced different level of inequality across extended families. A visual comparison of Figure 2 with the distributions of household expenditure per capita in 2011-13 (Figure 4) suggests that, similarly, in 2010s, tribes exhibit different distributions and that the same tribes have the flatter distribution in the past and in the present. The visual comparison of the distribution of livestock per capita in the past and that of income in the present (Figures 3 and 5) is less straightforward, in part because the distributions are less concentrated (the vertical scales are very different).

To compare level of inequality across tribes more systematically, we construct pseudo-Kuznets ratios for area and livestock per capita in 1910 and income and expenditure in 2011-13 (as explained above,

we average per capita income across the three survey waves). Specifically, for each variable, we divide the average measure in the top quintile of the distribution by the average in the bottom two quintiles.[8] Figure 6 plots the obtained measures for livestock per capita in 1910 and expenditure per capita in 2011-13. Each dot corresponds to a tribe and the size of the dot is proportional to the size of the dot in 1910. The figure suggests a positive correlation between these inequality measures: tribes in which the top quintile owned - on average - less than three time the average livestock of the bottom two quintiles (pseudo-Kuznets ratio below three) in 1910s have a pseudo-Kuznets ratio below three in expenditure per capita in 2011-13. In contrast, the highest level of inequality today (pseudo-Kuznets ratio above 3) are present in tribes that also experienced relatively high inequality in the past (pseudo-Kuznets ratio above 3). While the measures obtained in the past and in the present are of remarkably similar magnitude, they are based on variables measured at different levels of aggregation: in 1910 data, the most disaggregated information is available at the extended family level (composed of 10 households, on average), while in 2011-13, we have household-level information. This implies that the level of inequality is actually underestimated for the historical data.[9] Figures 7 to 9 reproduce the same plot for the other measures of inequality. Table 2 presents the matrix of correlation coefficients across the various measures of inequality for the 34 tribes (observations are weighted by the size of the tribe). The correlation coefficients between past and present measures are large - between 0.34 and 0.63, depending on the measure used - and mostly significant (except for the correlation between the pseudo-Kuznets ratio for land and for expenditure).

In short, in addition to persistence in average tribe well-being over the century, we find substantial persistence in the levels of intra-tribe inequality.

5 Explaining persistence

A large litterature in economics has documented persistence in relative economic outcomes over a long period of time (see, for instance, Solon, 1999, Black and Devereux, 2011, and Clark, 2014). What drives the persistence in almost all of this litterature is the fundamental mechanism of wealth transmission from parents to their children: richer parents leave larger bequests to their children, who in turn transmit wealth to their own children. Hence richer families at the start of the 20th century are expected to fare better a century later. What makes our study particularly interesting is that the

[8] We consider the distribution across *individuals* of the same tribes. We attribute to each member of the extended family (household) the average per capita measure of the extended family (household).

[9] In fact, they are somewhat underestimated for the present-day data as well, since we use household averages. The problem is, however, more severe with the 1910 data, given that we ignore the inequality across households of the same extended family. Using data from Kazakhstan, Aldashev and Guirkinger (2017) have shown that this bias may be quite severe: extended families group households with widely different standard of living, with the richest members acting as "patrons" for impoverished households.

wealth inheritance channel was *de facto* shut down by Soviet economic and social policies. In this section we discuss alternative mechanisms for persistence.

5.1 Transmission of material assets?

As discussed in Section 2.2, during the 20th century, Kyrgyzstan, just like all the Soviet republics, went through deep structural changes. Aggressive redistributive policies targeted the wealthy households; virtually all the land and livestock were *de facto* collectivized. The traditional nomadic-pastoralist system was eliminated and replaced by an agricultural sector based on collective ownership of both land and livestock with extremely limited private property and little heterogeneity between peasants within the collective farms (kolkhozs). The transmission of material assets through inheritance was limited, not because inheritance was forbidden but because "the preponderent public ownership of the means of production considerably constrained the accumulation of private wealth" (Bergson, 1984).

While the collective farms have been largely privatized after the fall of the USSR, it would be too simplistic to assume that the privatization process automatically restituted the land to the descendants of the landowners of the 1920s. First, when the privatization occured, all kolkhoz members had - at least *de jure* - the same rights to the land, and these members were typically from different tribes (a kolkhoz usually grouped families from different tribes, especially after the restructuring of small kolkhozs during the Khrushchev era). This implies that the descendants of the families that entered into the kolkhozs in the 1930s should all have obtained the same share of the land, regardless of the size of the estate of their ancestors. In practice, however, observers of the privatization process have reported important departures from the rule of equal division of the kolkhoz land among its members, with local leaders using their power to divert the process towards their private interests (Petric et al., 2004). This would suggest an alternative mechanism for the correlation of tribal material wealth between 1910 and 2012: if members of wealthier tribes in 1910 were more likely to occupy positions of local power (such as the heads of kolkhozs) in 1991, they may have been favored in the privatization process, giving them a headstart in the new market economy. It would be the conversion of wealth into local power during the Soviet period - or the continuity in tribe's relative power before and during the period - that enabled relatively wealthier tribes in 1910 to fare relatively better a century later, despite the massive disruption in private property ownership (we come back to this argument in Section 5.3).

However, other elements suggest that it is very unlikely that the persistence in relative well-being is driven *mainly* by an unequal access to land during the privatization process. First, already during the Soviet period, members of the once-wealthier tribes were more likely to leave the kolkhozs and work in non-agricultural sectors (see Section 4.1). Second, we show above that income and consumption in 2012 are *negatively* correlated with land ownership: tribes who had more land in 1910 hold less land today. Given the extreme thinness of the agricultural land market since privatization (Steiman and

Muller-Boker, 2010), we can safely deduce that tribes who owned more land in 1910 owned less land immediately after privatization. In short, the persistence we document above cannot be explained simply by the transmission of material assets from parents to children over the 20th century.

5.2 Transmission of intangible assets: human capital?

In absence of material wealth transmission, a natural candidate to explain persistence of material well-being is the transmission of other (intangible) assets which are conducive to income generation. For example, suppose that families that were wealthy before collectivization succeded in securing a good education for their offsprings who then did the same for their own children. Suppose also that after the fall of the Soviet union and the birth of a market economy, the better educated were better able to seize the new income-generating opportunities. Then we would observe that descendents of the wealthier tribes in the past earn more today. The existence of an inter-generational transmission of education levels in the Soviet Union has been documented by many scholars (see Bergson, 1984, for a review): children of university graduates were far more likely than children of manual workers to go to the university. Yet we find little evidence that members of wealthier tribes in 1910 acquired a higher level of education: the level of education of fathers of respondents who grew up during the Soviet period is not significantly correlated with the tribe wealth in the past (Tables 7 and 8, column 1), and neither are the education of male respondents themselves (Table 5, column 1). This may be because the education levels in Kyrgyzstan remain modest and our sample size is too small to detect an effect.

Besides formal education, families may also transmit cultural traits, some of which might facilitate economic success under the market system (for example, values of entrepreneurship). Our data does not allow to directly trace the persistence of cultural traits. However, a necessary condition for this explanation to be valid is that tribes exhibit sufficiently marked differences in cultural traits. This condition can be tested using the 2012 wave of LiK that includes rich information on respondents' culture and values, in particular regarding family. To compare cultural traits across tribes, we run simple regressions with tribe and neighborhood fixed effects: $Y_{itg} = \gamma_t + \gamma_g + \varepsilon_i$. The predicted values on the tribe indicator variables ($\widehat{\gamma_t}$) correspond to the average of the dependent variable for each tribe t, controlling for neighborhood effects.[10] We perform this analysis for three dependent variables related to marriage and family outcomes. The first is the so-called "bride capture". Every married woman was asked how her marriage came to be (i.e. whether it was a love marriage, whether it was arranged by both families, or whether she was a "captured" bride). Bride capture consists in kidnapping a future bride and celebrating a marriage shortly after the capture. It seems to be an important phenomenon in the current-day Kyrgyzstan: as many as 21% of women in our sample were

[10] Standard errors are clustered at the tribe level.

"captured" brides. Anthropologists have pointed to an increase in the phenomenon after the fall of the Soviet regime and women defense groups have mobilized against this practice that effectively push women into undesired marriages (see, for instance, Werner, 2009). The second outcome we consider is the openness of respondents to accept a future son or daughter in law from another ethnic background (non-Kyrgyz). This question was asked to all respondents. The third outcome relates to co-residence pattern. It is a binary variable indicating whether the respondent household is vertically extended, in the sense that parents live with one (or several) married child (children).

Figures 10, 11, 12 below present graphical representations of the regression results. Each dot corresponds to a different tribe and indicates the average predicted value of the outcome considered, controlling for neighborhood fixed effects. The figures indicate that there is substantial heterogeneity in the tribe average values for these measures. For example, while the prevalence of bride capture is 10% or lower in 5 tribes, it reaches levels above 30% in 6 tribes. Regarding openness to accept a son-in-law or a daughter-in-law from another ethnic group, the distribution of tribal averages is less spread, but there still are statistically significant differences between tribes. Finally, the co-residence patterns widely differ by tribes: in certain tribes, it is considered exceptional, while in certain others more than 75% of households are vertically extended. In short, we find evidence that, controlling for geography, tribes differ significantly in certain key cultural traits. While this is not *per se* a mechanism that explains the persistence in relative levels of material well-being we have documented earlier, it suggests that tribes may have (and transmit) specific cultural traits that may be more or less conducive to wealth accumulation.

5.3 Transmission of intangible assets: social / political capital?

A mechanism related to (but distinct from) the transmission of human capital is based on social networks. If the allocation of scarce resources (for example, prestigious positions or jobs) relies on clan-based networks, then tribes and clans who initially held powerful positions in the Soviet administration may have endowed their next-generation members with better economic and social opportunities. Then, even in the absence of an inter-generational transmission of wealth, education, or norms, we might observe a persistence in levels of relative prosperity over several generations. This mechanism could also account for the persistence of intra-tribe inequality: a higher level of inequality may accompany an over-representation of the tribe in elite positions. The services that clan networks provide to their members have been extensively studied by economic historians in the context of China (see Greif and Tabellini, 2017, and references therein). These services include education, social security, dispute settlements, control enforcement, but also preferential access to jobs or positions of power.[11]

[11] Campbell and Lee (2011) argue that clan networks enabled powerful clans to maintain a continuous presence among the bureaucratic elite during the imperial era, despite a highly competitive selection process of these elites through provincial and national exams. At each generation, clan leaders selected the most able potential candidates among

Historians and political scientists provide evidence that, in Kyrgyzstan, clan and tribe networks were important in the political elite sphere during the colonial and Soviet era, and that, in the post-Soviet period, both local politics and business activities heavily relied on clan solidarity and loyalty norms. During the Russian imperial period, the tribal and clanic structures were deliberately used as a base on which to construct colonial power, by integrating the elites of the lineages into the colonial leadership system and by rewarding these elites with special privileges (Ohayon, 2016). In contrast, after the 1917 Revolution, the Soviet regime claimed to replace the "backward" clan-based system with a "modern nation". Yet, in practice, the first political leaders of the Soviet regimes in Central Asia were from the indigenous intelligentsia composed of tribe leaders and their descendants (Asankanov et al. 2017: 494-495). This state of affairs was later heavily criticized by the center. A statement (cited in Ohayon, 2016) made at the 4th plenary of the Kyrgyz Regional Committee of the Communist party illustrates this point: *"Lineage relations, and the combat between what remains of lineage and group relations, continue to be questions of the utmost importance for us in Kyrgyzia. The struggle of lineages and groups is today the main weapon of the class enemy, the weapon of the bay and the manap that makes it possible for them to influence the kolkhozes as well as the local Soviet apparatus from within, and in this way to elude and to corrupt the class line.*" Nevertheless the local apparatus continued to be deeply interwined with lineage-based structure of power and the center often used lineage networks to help implementing its policies.[12] Ohayon concludes her fascinating analysis of the role of clans and tribes in politics in the 1920s and 1930s by stating: "Despite purges and other phenomena that weakened the political resources of the lineages, it appears that the political duplicity that emerged through the meeting between two forms of power and loyalty lastingly structured local power in the Kyrgyz Soviet republic, sometimes working to thwart the Soviet state's ideal and project, and sometimes ensuring its implementation." She argues in particular that even when politicians were chosen from the top for their loyalty to the regime, to rule locally they had to play along clanic and tribal lines. Similarly, Junushaliev (2003) provides ample evidence for the use of clanic and tribal relations for the occupation of key political positions in the 1920s and 1930s.

After the fall of the USSR and the introduction of democratic elections in Kyrgyzstan, tribal or clan-based loyalties still appear to play some role in politics. Several scholars have underlined how powerful politicians skillfully exploit clan identities to win votes (Collins, 2002; Schatz, 2004). Yet, others scholars suggest that such structures play a relatilvey minor role in national politics, but may nevertheless be mobilized in the context of local elections (Gulette, 2006; Jacquesson, 2012). Jacquesson (2012) provide examples where the instrumentalization of clan identity by contenders of local elections in rural areas led to unprecedented antagonism between clans.[13]

families of the clan and all families of the clan pooled resources to pay for the best preparation to the exams (see also Clark, 2014).

[12]For example, to deport the kulaks, Stalin's police could not rely on the local knowledge of members of the same lineage of the wealthy kulak, hence they extracted information from the competing lineages.

[13]We use here the term clan in a generic way. Jacquesson underlines that the relevant social group is highly context

Local businessmen who thrive in the new market economy may also rely on lineage networks to develop their economic activities. Ismailbekova (2017) provides a detailed account of the career of a successful entrepreneur who built his enterprise by mobilizing loyal clan members. She argues that patron-client relationships link the entrepreneur with his "helpers", in the sense that the relationship is characterized by trust, exchange, and mutual benefit (with the patron benefiting relatively more from this relationship). A key advantage for the client is the safety net that the patron offers in times of uncertainty. While the institution existed within clans and tribes in the pre-Soviet period, Ismailbekova argues that modern patronage is quite different in the type of services it offers to both parties and the sophisticated manipulation of clan identity it entails. Interestingly, her case study illustrates how the economic and political spheres interplay, since the local entrepreneur consolidated his economic success by winning local election and embarking on a national political career (that was abruptly stopped by his assassination).

In short, scholarly accounts of the roles of clans and tribes during and after the Soviet period suggest a strong continuity in the embeddedness of local politics in clan and tribe networks. This may help explain the continuity we find in the relative performance of clans in the economic sphere. Even if the Soviet regime managed to considerably compress wealth inequality, tribes that were economically advantaged in 1910 possibly captured a disproportionate share of the elite positions of the new Soviet regime. If these elites were in a better position to thrive (or survive) in the new market economy, their tribes (which were already relatively wealthier in 1910s) may be performing better economically in 2010s.

Quantitative investigation

Data on politicians elected into the Supreme Soviet of Kyrgyz SSR in the 1970s enable us to test this "continuity of the elites" hypothesis. From 1960s until 1991, after each election of the Republican Supreme Soviet, the Soviet government printed a short biography of all elected members. Starting in 1972, these biographies contain detailed information on the place of birth of elected officials. We use data from 1972 and 1976 (the two volumes containing information on the place of birth that we could easily get access to). Matching this data with detailed maps of tribes (from the Abramzon and Vinnikov expeditions in 1950s), we attribute to each elected member his/her tribe (if there are several tribes present in the place of birth, we weight the probability of belonging to each of these tribes with the population share of the tribes in the place). We can then compare the relative share of each tribe among these officials to the importance of the tribe in the population in 1910 and compute for each tribe a measure of its relative representation among the political elite. We then correlate this relative representation with measures of the tribe's wealth in 1910.

specific. In some areas, political contests oppose two clans of the same tribe, while in others, the contest is clearly between tribes.

Our measure of the representation of the tribe among the elite is the ratio of the fraction of the elite belonging to a given tribe over the fraction of the tribe in the general population. In formula:

$$RelativeShareElite_t = \frac{\frac{Nelite_t}{\sum_k Nelite_k}}{\frac{N_t}{\sum_k N_k}}$$

where $Nelite_t$ is the number of members of the elite belonging to tribe t and N_t is the size of tribe t. If the ratio is larger than one, it indicate that the tribe is overrepresented among the elite, compared to its importance in the general population. Using this definition, we build a measure of the representation of the tribes in the political elite of the 1970s and also measures of the representation of the tribes in the "economic elites" of the 1910s. We define the economic elites as the families in the first decile (or quartile) of the wealth distribution, using livestock and area per capita as measures of wealth. Table 12 reports the correlations betwee the tribe's representation among deputies and the tribe's representation among the economic elites in the 1910s (as well as with measure of average wealth). Correlation coefficients reported in the last row are all positive, suggesting that tribes over-represented among deputies fared better in 1910, both in terms of average tribe wealth and in terms of representation among the economic elites. The correlation is modest though, ranging from 0.20 to 0.38, depending on the measure used for economic power in 1910. We conclude that there was some continuity of the elites over the period, but also that the political elites were not overwhelmingly stemming from wealthier tribes.

6 Conclusion

We have studied the role of traditional tribal-clanic instititutions in driving the persistence of household-level economic outcomes over a long run period in a context where the government conducted a multitude of aggressive egalitarian and anti-traditional economic and cultural policies. Our main finding is the correlation, in tribe-level economic outcomes, between 1910s and 2010s, in Kyrgyzstan, even after controlling for unobservable local geographic effects. The relative income (or expenditures) of individuals living in the same district (geographical cluster) is positively correlated with the material well-being of their (paternal) tribes in 1910s. Furthermore, we find that the economic inequality among tribe members today correlates with the within-tribe wealth inequality in the early 20th century.

Next, we have investigates the potential channels driving this persistence. Using additional data from the Soviet period, we find support for the inter-generational transmission of human capital/relative status, political power, and cultural traits. On the other hand, we are able to rule our the transmission of material assets, the differences in natural endowments, and the presence of geographic sorting as the explanations for observed long-run persistence in economic outcomes.

Our findings have important implications for the understanding the role of kinship institutions on the

economic behavior and outcomes in developing countries today. First of all, our results imply that such institutions are extremely resilient: their influence resists some of the most radical economic and cultural public policies ever undertaken. Secondly, we shed some light on the small and growing literature on group inequality that mostly focuses on large groups (ethnicity, race, etc.) and inter-group inequality. Here, we are able to go at the finer level of sub-ethnic groups (tribes and clans). This refinement is important, because in a society where people strongly identify with tribes, clans, and other sub-ethnic groups, the emergence and rise of inter-clan inequality in economic outcomes potentially creates fertile ground for internal rivalry and conflicts, including the instrumentalization of such identities by political parties. Such instrumentalization clearly is a major factor that can destabilize the society. We hope that our study opens new avenues for analyzing these and related phenomena.

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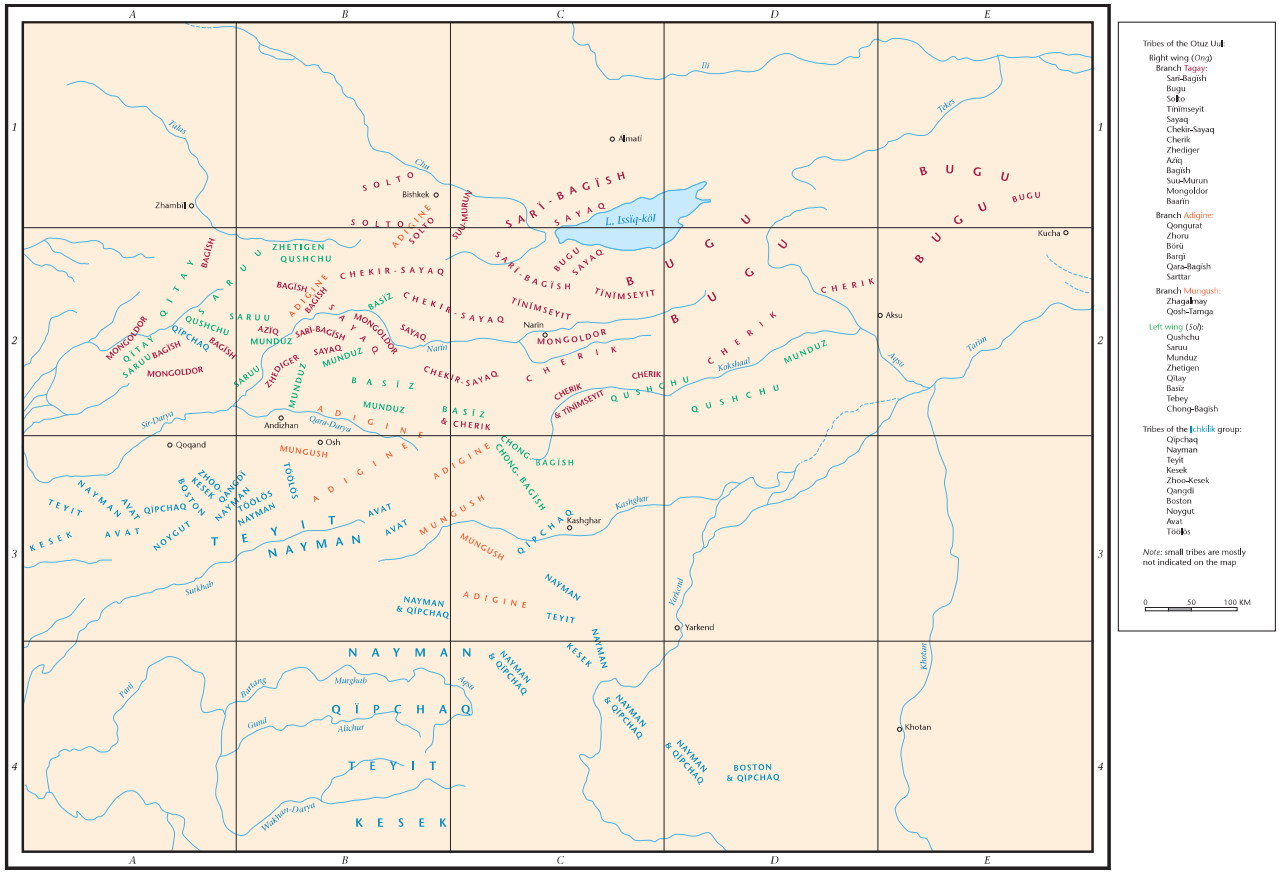
Figures and Tables

Figure 1: Map of tribes' location



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39. THE QÏRGHÏZ TRIBES IN THE 20TH CENTURY

Figure 3: Distribution of livestock per capita by tribe in 1910 (kernel density)

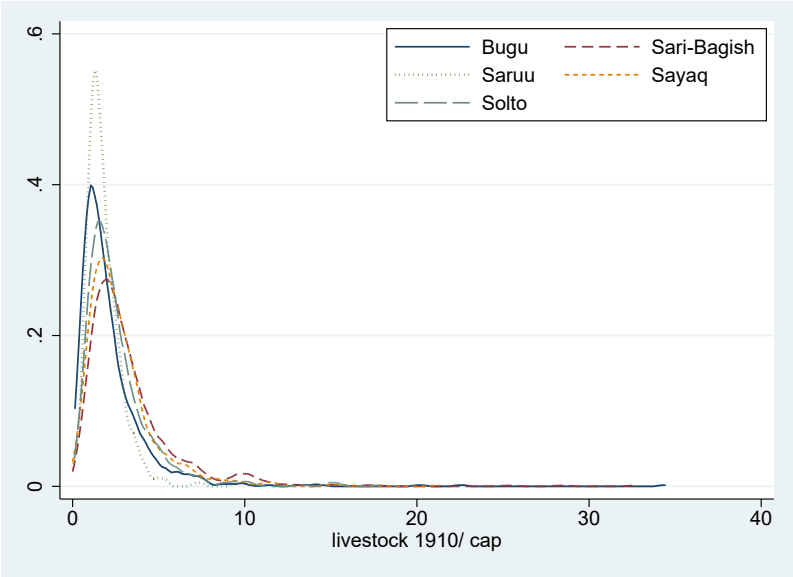

Figure 2: Distribution of cultivated area per capita by tribe in 1910 (kernel density)

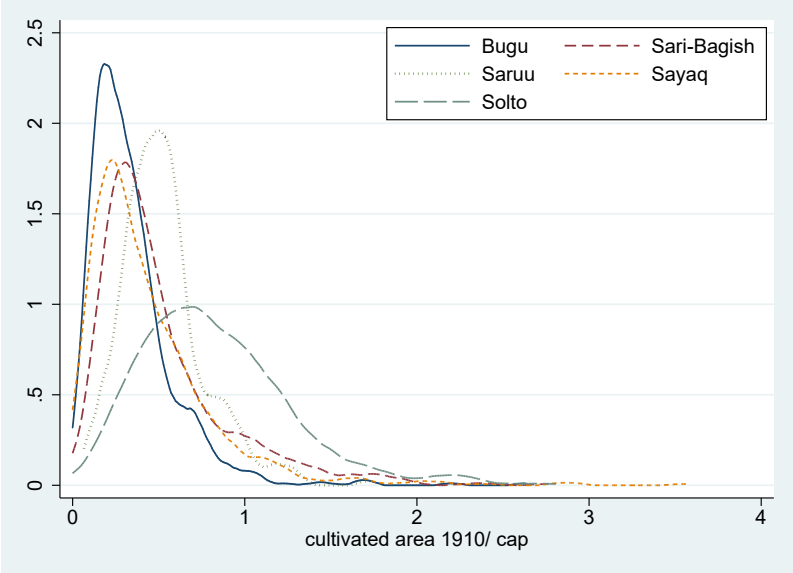

Figure 5: Distribution of income per capita by tribe in 2011-13 (kernel density)

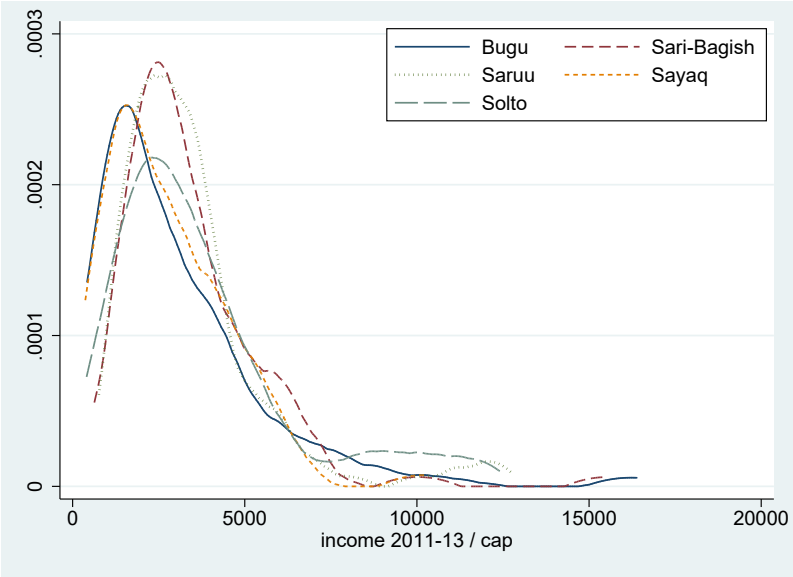

Figure 4: Distribution of total expenditures per capita by tribe in 2011-13 (kernel density)

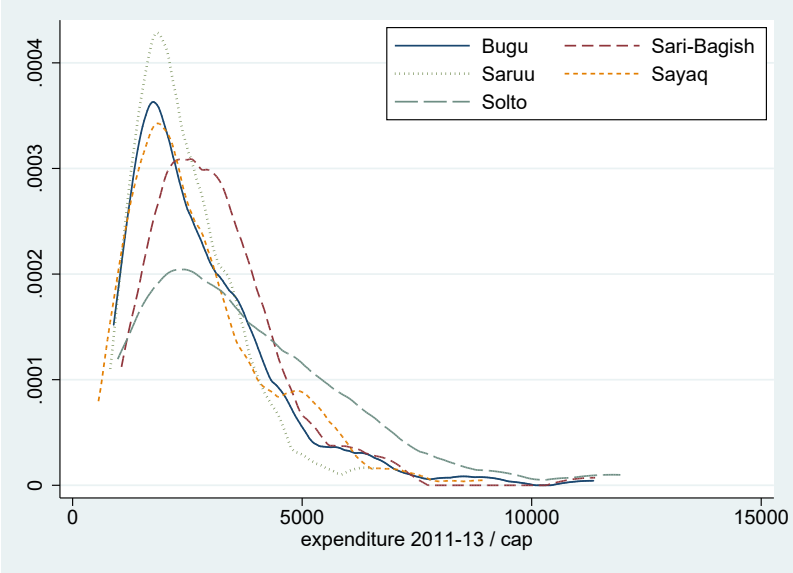

Figure 7: Plot of pseudo-Kuznets for expenditure 2011-13 and for cultivated area in 1910 (dot proportional to tribe size)

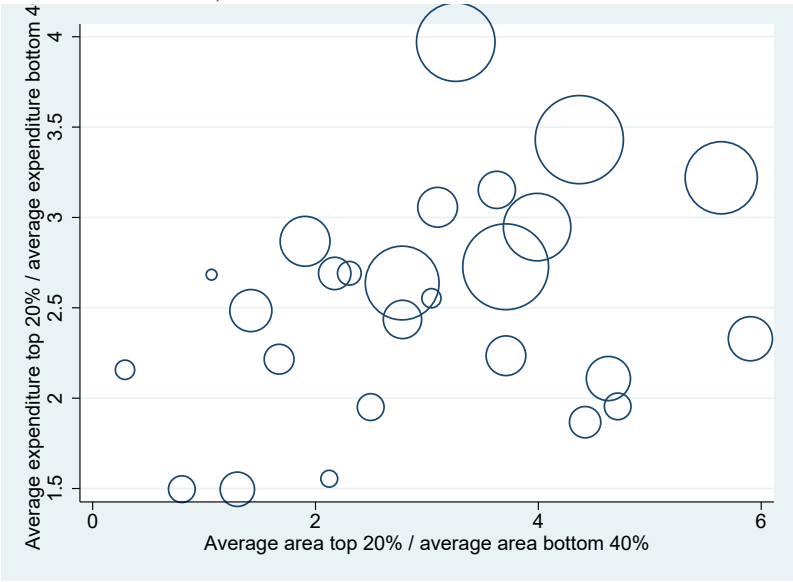

Figure 6: Pseudo-Kuznets ratios for expenditures 2011-13 and for livestock in 1910 (dot proportional to tribe size)

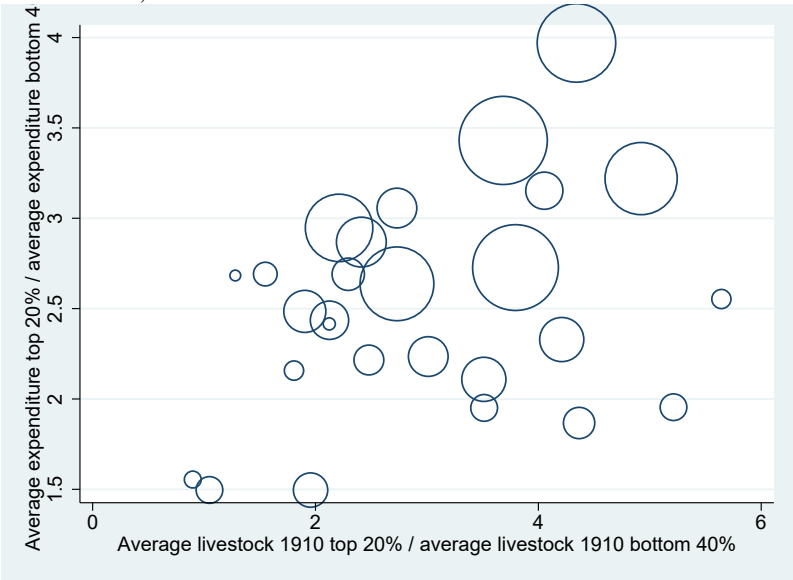

Figure 8: Plot of pseudo-Kuznets for income 2011-13 and for livestock in 1910 (dot proportional to tribe size)

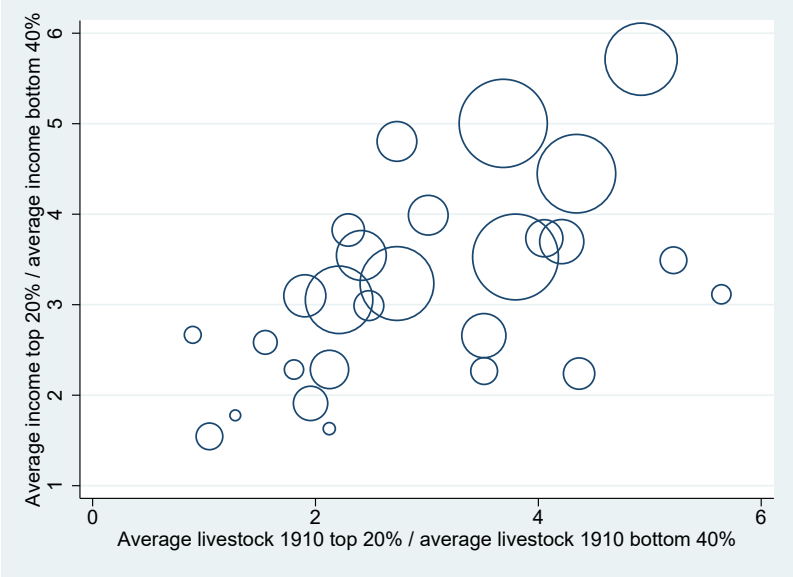

Figure 9: Plot of pseudo-Kuznets for income 2011-13 and for area in 1910 (dot proportional to tribe size)

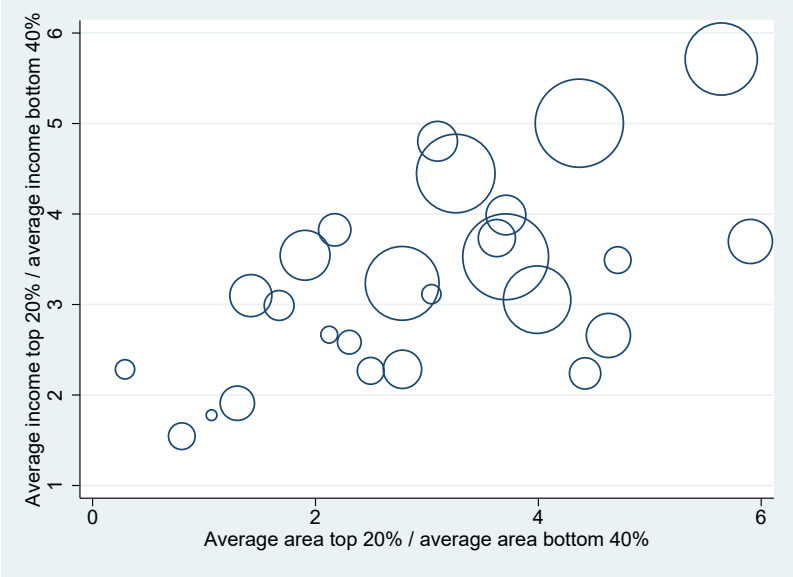

Figure 10: Differences across tribes in prevalence of bride capture: predicted tribe average with 95% confidence interval controlling for neighborhood

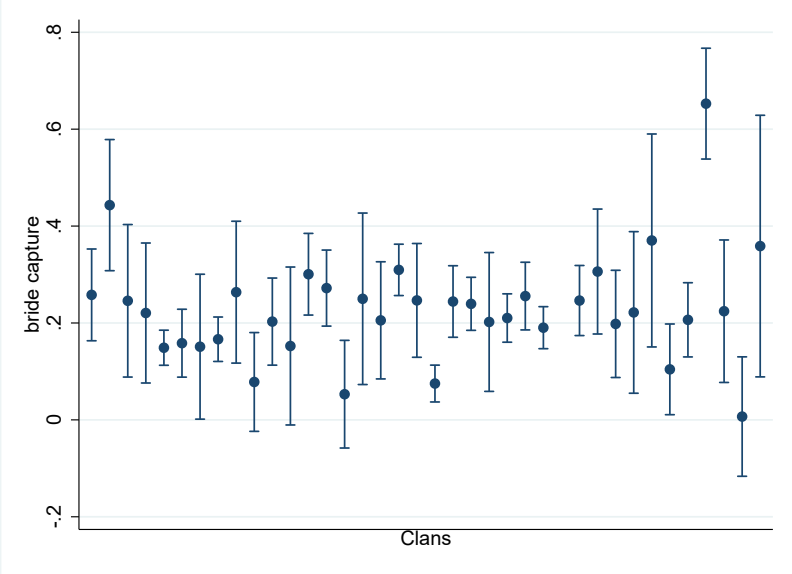

Figure 11: Differences across tribes in openness to accepting a daughter-in-law or a son-in-law from another ethnic group: predicted tribe average with 95% confidence interval controlling for neighborhood

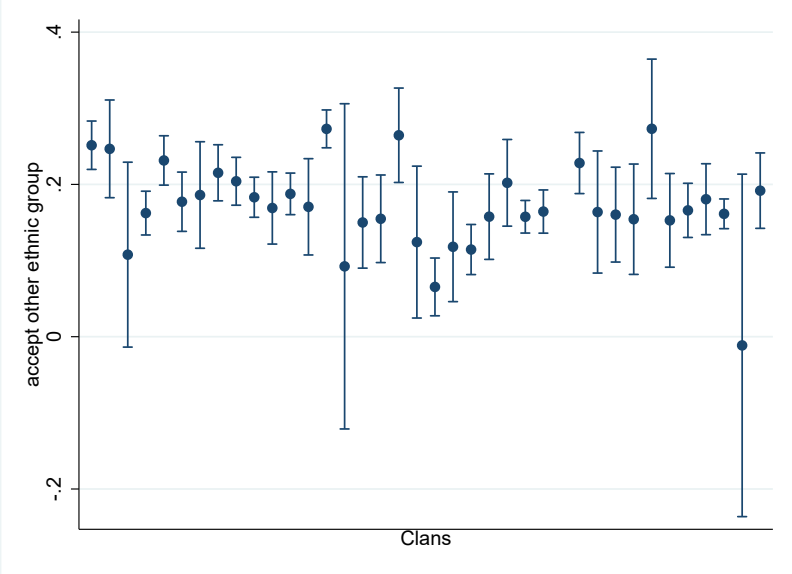

Figure 12: Differences across tribes in co-residence between parents and married children: predicted tribe average with 95% confidence interval controlling for neighborhood

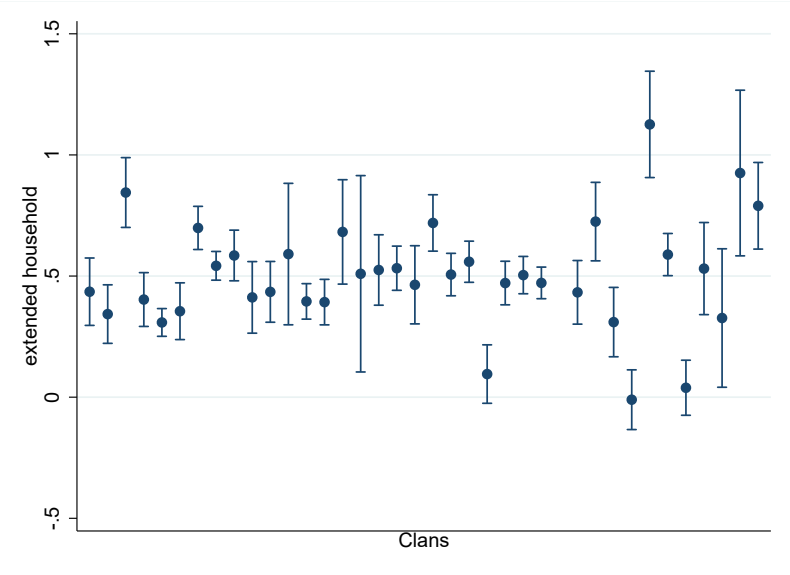

Table 1: Descriptive statistics

	count	mean	sd	min	max
Historical data 1910					
tribe wealth (z_score)	34	0.019	0.30	-0.46	0.99
tribe land (z_score)	34	0.11	0.63	-1.11	2.68
tribe livestock (z_score)	34	-0.072	0.48	-0.76	1.57
tribe land/cap (des)	34	0.54	0.23	0.067	1.50
tribe livestock/cap (horse eq)	34	2.28	0.95	1.13	5.35
Household level data 2012					
income/cap (2011-13)	1324	3152.9	2472.0	316.8	47318.5
expenditure/cap (2011-13)	1344	2665.4	1520.4	248.0	14012.4
asset index	1343	-0.061	2.34	-5.00	12.5
any land owned	1344	0.79	0.41	0	1
area/cap	1344	0.21	0.46	0	8.20
irrig. area/cap	1344	0.18	0.39	0	5.80
age hh head	1344	51.7	13.7	18	94
Individual level data 2012					
years of education (men>23)	1590	11.1	2.24	0	17
height (men>23)	1555	172.2	6.05	149	192
bodymass index (bmi) (>23)	3253	24.6	3.13	11.7	44.1
1st born birthweight (women>23)	1459	3.14	0.42	1.40	5.20
fertility (# birth) (women>40)	1013	3.75	2.07	0	10
Fathers of men past outcomes					
father's education (years)	1143	8.31	4.42	0	16.7
father in unskilled occupation	1079	0.53	0.50	0	1
father in agriculture	1106	0.68	0.47	0	1
father had a good position	1079	0.12	0.33	0	1

Table 2: Correlation between measures of tribe inequality in the past and in the present

	Pseudo-Kuznets ratios (average for top 20% / average for bottom 40%)			
	expenditure 2011-13	income 2011-13	land 1910	livestock 1910
expenditure 2011-13	1.00			
income 2011-13	0.79***	1.00		
land 1910	0.34	0.55**	1.00	
livestock 1910	0.52**	0.63***	0.74***	1.00
N	34			

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Tribes are weighted by their size in 1910.

Table 3: Average household income and expenditure (per capita) in 2011-13 as a function of past tribe wealth

	(1) z-score income 2011-13	(2) z-score expenditure 2011-13	(3) income (in som) 2011-13	(4) expenditure (in som) 2011-13
tribe wealth 1910 (z_score)	0.291**	0.563*	705.100**	893.636*
	(0.137)	(0.309)	(330.582)	(490.433)
N	1324	1343	1324	1343
tribe land 1910 (z_score)	0.246***	0.296	594.337***	469.985
	(0.057)	(0.209)	(139.121)	(331.041)
tribe livestock 1910 (z_score)	-0.086	0.247	-209.165	392.603
	(0.147)	(0.184)	(355.030)	(292.670)
N	1324	1343	1324	1343
cultivated area tribe / cap (1910)	0.694***	0.772*	1679.961***	1224.683*
	(0.185)	(0.456)	(446.923)	(723.149)
livestock tribe / cap (1910)	-0.066	0.259***	-159.528	410.489***
	(0.079)	(0.092)	(191.313)	(146.432)
N	1324	1343	1324	1343

Each horizontal panel (and column) reports separate linear regressions.

Weights = # extended families in 1910.

Clustered robust standard errors in parentheses (at tribe level).

Controls include the household head age and its square.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Average household income and expenditure (per capita) in 2011-13 as a function of past tribe wealth, with neighborhood fixed effects

	(1)	(2)	(3)	(4)
	z-score inc	z-score exp	income	expenditure
	2011-13	2011-13	2011-13	2011-13
tribe wealth 1910 (z_score)	0.195**	0.171***	472.277**	271.062***
	(0.076)	(0.049)	(184.157)	(78.103)
N	1324	1343	1324	1343
tribe land 1910 (z_score)	0.105**	0.127***	253.914**	200.978***
	(0.040)	(0.026)	(97.030)	(41.722)
tribe livestock 1910 (z_score)	0.078	-0.025	189.301	-39.259
	(0.128)	(0.108)	(310.340)	(171.669)
N	1324	1343	1324	1343
cultivated area tribe / cap (1910)	0.316***	0.324***	764.137***	513.542***
	(0.114)	(0.078)	(276.457)	(124.096)
livestock tribe / cap (1910)	0.014	-0.007	34.765	-10.676
	(0.065)	(0.044)	(158.400)	(69.877)
N	1324	1343	1324	1343

Each horizontal panel (and column) reports separate linear regressions.

Weights = # extended families in 1910.

Clustered robust standard errors in parentheses (at tribe level).

Fixed effects at the neighborhood level (2010 sampling unit).

Controls include the household head age and its square.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Household assets in 2012 as a function of past tribe wealth, with neighbourhood fixed effects

	(1) asset index	(2) any land owned	(3) land area per capita	(4) irrig. land area per capita
tribe wealth 1910 (z_score)	0.348*	-0.028	-0.090**	-0.095**
	(0.193)	(0.051)	(0.042)	(0.038)
N	1343	1343	1343	1343
tribe land 1910 (z_score)	0.200	0.017	-0.047*	-0.053**
	(0.160)	(0.015)	(0.024)	(0.022)
tribe livestock 1910 (z_score)	0.104	-0.096**	-0.040	-0.032
	(0.210)	(0.043)	(0.030)	(0.029)
N	1343	1343	1343	1343
cultivated area tribe / cap (1910)	0.648	0.037	-0.117*	-0.140**
	(0.469)	(0.061)	(0.069)	(0.065)
livestock tribe / cap (1910)	-0.011	-0.045	-0.041**	-0.028
	(0.149)	(0.029)	(0.019)	(0.020)
N	1343	1343	1343	1343

Each horizontal panel (and column) reports separate linear regressions.

Weights = # extended families in 1910.

Clustered robust standard errors in parentheses (at tribe level).

Fixed effects at the 2010 sampling unit level.

Controls include the household head age and its square.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Human capital and fertility as a function of past tribe wealth, with neighborhood fixed effects

	(1) education (years) men>23	(2) height men>23	(3) BMI women & men>23	(4) 1st born birthweight women>25	(5) fertility women>40
tribe wealth 1910 (z_score)	0.070	0.739	0.930***	0.118***	-0.328
	(0.449)	(1.231)	(0.256)	(0.036)	(0.219)
N	1595	1560	3253	1459	1013
tribe land 1910 (z_score)	-0.065	1.131**	0.515***	0.049***	-0.285**
	(0.205)	(0.497)	(0.147)	(0.015)	(0.122)
tribe livestock 1910 (z_score)	0.438	-2.405**	0.321	0.090***	0.211
	(0.379)	(1.024)	(0.306)	(0.028)	(0.295)
N	1590	1555	3253	1459	1013
cultivated area tribe / cap (1910)	0.013	3.092**	1.323***	0.136**	-0.911**
	(0.502)	(1.477)	(0.396)	(0.061)	(0.390)
livestock tribe / cap (1910)	0.154	-0.882	0.005	0.026	0.149
	(0.265)	(0.537)	(0.199)	(0.025)	(0.201)
N	1590	1555	3253	1459	1013

Each horizontal panel (and column) reports separate linear regressions.

Weights = # extended families in 1910. Clustered robust standard errors in parentheses (at tribe level).

Fixed effects at the 2010 sampling unit level. Controls include individual age and its square.

Each observation is an individual.

We focus on men for education and height because they are determined by investments made by parents (due to the exogamy rule, only the tribe of men's parents can be inferred).

Fertility questions were answered by women. To focus on completed fertility, we consider women above 40.

For birthweight of first-born we include women above 26. At 26, 80% of women respondents report to have at least one child.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Father's education and occupation as a function of past tribe wealth, with neighborhood fixed effects

	(1) mens' father's education (years)	(2) mens' father's in unskilled occupation	(3) mens' father's in agriculture	(4) mens' father's held a good position
tribe wealth 1910 (z_score)	-0.16	-0.11*	-0.18*	0.10
	(0.44)	(0.06)	(0.10)	(0.08)
N	1143	1079	1106	1079
tribe land 1910 (z_score)	0.09	-0.04	-0.08	0.09*
	(0.20)	(0.03)	(0.05)	(0.05)
tribe livestock 1910 (z_score)	-0.54	-0.10	-0.10	-0.04
	(0.64)	(0.06)	(0.10)	(0.07)
N	1143	1079	1106	1079
cultivated area tribe / cap (1910)	-0.07	-0.07	-0.10**	0.03
	(0.39)	(0.05)	(0.04)	(0.04)
livestock tribe / cap (1910)	0.19	-0.09	-0.15	0.20
	(0.54)	(0.08)	(0.14)	(0.12)
N	1143	1079	1106	1079

Each horizontal panel (and column) reports separate linear regressions.

Weights = # extended families in 1910.

Clustered robust standard errors in parentheses (at tribe level).

Fixed effects at the 2010 sampling unit level. Controls include the age the father would have and its square.

Each observation is an individual.

We focus on men's fathers because due to exogamy, only tribe of men's father can be inferred.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Father's education and occupation as a function of past tribe wealth (men born before 1965), with neighborhood fixed effects

	(1) mens' father's education (years)	(2) mens' father's in unskilled occupation	(3) mens' father's in agriculture	(4) mens' father's held a good position
tribe wealth 1910 (z_score)	0.95	-0.21*	-0.56**	0.07
	(1.07)	(0.11)	(0.24)	(0.07)
N	556	528	539	528
tribe land 1910 (z_score)	-0.01	-0.05	-0.33***	0.01
	(0.39)	(0.08)	(0.10)	(0.04)
tribe livestock 1910 (z_score)	1.89	-0.22***	-0.15	0.11
	(1.33)	(0.07)	(0.20)	(0.09)
N	556	528	539	528
cultivated area tribe / cap (1910)	0.82	-0.15**	-0.11	0.11**
	(0.72)	(0.07)	(0.10)	(0.04)
livestock tribe / cap (1910)	-0.22	-0.03	-0.73**	-0.03
	(1.30)	(0.24)	(0.28)	(0.11)
N	556	528	539	528

Each horizontal panel (and column) reports separate linear regressions.

Weights = # extended families in 1910.

Clustered robust standard errors in parentheses (at tribe level).

Fixed effects at the 2010 sampling unit level. Controls include the age the father would have and its square.

Each observation is an individual.

We focus on men's fathers because due to exogamy, only tribe of men's father can be inferred.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9: Type of marriage and openness to son/daughter in law from different backgrounds, with neighborhood fixed effects

	(1) made a love marriage	(2) marriage was bride capture	(3) would accept different ethnic group	(4) would accept different religion	(5) would accept different socio-eco
tribe wealth 1910 (z_score)	-0.126***	0.042	-0.087***	-0.037	-0.041
	(0.022)	(0.041)	(0.020)	(0.025)	(0.045)
N	1745	1745	4197	4197	4197
tribe land 1910 (z_score)	-0.038	-0.014	-0.027	-0.011	-0.002
	(0.025)	(0.021)	(0.017)	(0.009)	(0.020)
tribe livestock 1910 (z_score)	-0.141**	0.131**	-0.092***	-0.039	-0.076
	(0.069)	(0.058)	(0.012)	(0.027)	(0.053)
N	1745	1745	4197	4197	4197
cultivated area tribe / cap (1910)	-0.123	-0.045	-0.058	-0.028	0.032
	(0.093)	(0.082)	(0.036)	(0.025)	(0.060)
livestock tribe / cap (1910)	-0.041	0.048	-0.048***	-0.022	-0.040
	(0.036)	(0.036)	(0.011)	(0.013)	(0.027)
N	1745	1745	4197	4197	4197

Each horizontal panel (and column) reports separate linear regressions.

Weights = # extended families in 1910.

Clustered robust standard errors in parentheses (at tribe level).

Fixed effects at the 2010 sampling unit level. Controls include individual age and its square.

Each observation is an individual.

Only women were asked about the type of marriage they contracted.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 10: Living with parents / in-law as a function of past tribe wealth, with neighbourhood fixed effects

	(1) vertically extended hh	(2) vertically extended hh	(3) vertically extended hh	(4) vertically extended hh	(5) vertically extended hh	(6) vertically extended hh
tribe wealth 1910 (z_score)	-0.091**			-0.076**		
	(0.037)			(0.035)		
tribe land 1910 (z_score)		-0.063**			-0.052**	
		(0.023)			(0.024)	
tribe livestock 1910 (z_score)		0.002			-0.001	
		(0.029)			(0.027)	
cultivated area tribe / cap (1910)			-0.152*			-0.125
			(0.081)			(0.082)
# animals in tribe / cap (1910)			-0.004			-0.004
			(0.031)			(0.032)
expenditure / cap (2010-12)				-0.054***	-0.054***	-0.054***
				(0.010)	(0.010)	(0.010)
N	1343	1343	1343	1343	1343	1343

Weights = # extended families in 1910.

Clustered robust standard errors in parentheses (at tribe level).

Fixed effects at the 2010 sampling unit level. Controls include individual age and its square. Expenditure is multiplied by 1000. Each observation is an individual. The tribe is that of the household head

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 11: Nostalgic of a Russian/Soviet political system as a function of past tribe wealth

	in favor of a Soviet or Russian political system	in favor of a Soviet or Russian political system	in favor of a Soviet or Russian political system
tribe wealth 1910 (z_score)	-0.101***		
	(0.0234)		
tribe land 1910 (z_score)		-0.0682***	
		(0.0141)	
tribe livestock 1910 (z_score)		0.00107	
		(0.0489)	
cultivated area tribe / cap (1910)			-0.169***
			(0.0506)
livestock tribe / cap (1910)			0.0131
			(0.0227)
N	4033	4033	4033

Weights = # extended families in 1910.

Clustered robust standard errors in parentheses (at tribe level).

Fixed effects at the 2010 sampling unit level. Controls include individual age and its square.

Each observation is an individual. The tribe is that of the household head

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 12: Correlation between measures of representation of the tribes among the elite (economic elite in 1910 and political elite in the 1970s)

	Land elite (top decile) 1910	Livestock elite (top decile) 1910	Land elite (top quartile) 1910	Livestock elite (top quartile) 1910
Land elite (top decile) 1910	1.00			
Livestock elite (top decile) 1910	0.09	1.00		
Land elite (top quartile) 1910	0.87***	0.04	1.00	
Livestock elite (top quartile) 1910	0.08	0.91***	0.06	1.00
Political elite 1970s	0.20	0.19	0.15	0.31*
N	31			

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix

Matching procedure for historical data

A small share of historical clan names could not have been matched to tribes. One of the reason was that the administrative units in Central Asia during the Russian colonization did not separate regions by ethnicity and hence several administrative units (volost) did not necessarily contain Kyrgyz clans. Based on the materials of Abramzon we could identify several volosts which were not populated by Kyrgyz (most likely Kazakhs) and exclude them from matching. Yet, some of the volosts' borders were drawn as to contain both Kyrgyz and Kazakh clans. In those volosts the clan names we could not match could be Kazakh clans.

There was also a problem of spelling which posed problems for matching. In 1907 the clan names were recorded by Russian geographers based on oral responses of the Kyrgyz. Presumably, the Kyrgyz responded to the interview through an interpreter. Interpreters were usually Tatars (possibly also Kazakh who came under the Russian protectorate earlier than Kyrgyz) and therefore recorded clan names could correspond to the Tatar or Kazakh phonetic rules rather than Kyrgyz, for example Даулет (Daulet, Kazakh spelling) and Дөөлөт (Döölöt, Kyrgyz spelling). In some cases, possibly, the Russian geographers who recorded the responses misspelled the names because the Kyrgyz names sounded phonetically unfamiliar. If we could not find the direct match of recorded clan name we check for the possibility of another clan name which could sound similar. If the close match was found, we used the matched clan name. If no close match was found, clan remains unidentified. Examples:

Байгузук (Baiguzuk, misspelled name) and Байкүчүк (Baiküchük, correct Kyrgyz spelling), Бор (Bor, misspelled name) and Боор (Boor, correct Kyrgyz spelling). In such cases the match was considered close enough. Given that clan names usually reflect the name of a historic person from whom the clan or extended family stems, it is not uncommon to have the same sub-subclan names belonging to different clans. This is the difficult case where the name does not uniquely identify a clan. In these cases, we looked at the uezd (region) in which the clan resided in the distant past (the expedition of 1907) and compared it with the region in which the clan resided in not-so-distant past (the expedition of 1950s). Then if the regions of residence in 1907 and 1950s overlapped we considered the clan to be matched. Examples: Белек (Belek). The subclan with this name exists within the Solto clan and within the Sarybagysh clan. The clan Belek in the 1907 survey lived in Vostochno-Sokulukskaya volost (currently Sokulukski raion near Bishkek). According to the materials of the expedition in the 1950s Belek as part of Sarybagysh tribe lived in At-Bashy raion (this is Naryn oblast). But Belek as part of Solto tribe lived in Sokulukski raion. Hence, we decide that the clan Belek in 1907 data is more likely to be part of Solto tribe.