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**RATIONAL RESISTANCE TO LAND PRIVATISATION IN RUSSIA:
MODELLING THE BEHAVIOUR OF RURAL PRODUCERS IN
RESPONSE TO AGRARIAN REFORMS, 1861-2000**

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Modelling the Behaviour of Rural Producers in Response to Agrarian Reforms,
1861-2000***

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Abstract

This paper argues that rural opposition to land reform in transition Russia is a consequence of individually rational decisions by members of former state and collective farms about whether to support further land reform, or preserve the status quo, collective farming. Evidence from survey data shows that despite the government's efforts to promote a land market and independent farming in the 1990s, preferences in 1996 still favoured the largely unreformed status quo. The observed retention of collective farming is so widespread as to block both the development of a land market and restructuring. The visible consequence of stalemated reform has been persistent agricultural output decline and widespread bankruptcy of large farm entities, without any significant rise of independent farming. This paper formalises a dynamic argument for rational opposition to land reform, given the existence of uncertainty about the costs that individual cultivators will incur. It turns out that the consequences of initial decisions could have decisive impact on rejection of reform later on. The paper discusses, further, the relevance of the historical parallel during the post-Emancipation and Stolypin eras when peasant communes resisted enclosures and restructuring of rights to land. Opposition, seemingly irrational, recurred and lasted throughout the reform era. It can be seen that opposition to reform at that time, too, was individually rational, given incomplete property rights reform; the state also bears responsible in contemporary and historical times for policies that tended to help preserve the status-quo. The state failed to improve the unclear property rights which dampened reform incentives early on in the reform process both historically and in the rural transition environment.

KEYWORDS: Russian Land Reform, Economic history, Status-quo Preference in uncertainty, Development, Property Rights

JEL: N44, N54, O1, D7

I Introduction

This paper argues that rural opposition to land reform in transition Russia is a consequence of individually rational decisions by members of former state and collective farms about whether to support further land reform, or preserve the status quo, collective farming. Evidence from survey data shows that despite the government's efforts to promote a land market and independent farming in the 1990s, preferences in 1996 still favoured the largely unreformed status quo (Leonard 2000). The observed retention of collective farming is so widespread as to block both the development of a land market and restructuring. The visible consequence of stalemated reform has been persistent agricultural output decline and widespread bankruptcy of large farm entities, without any significant rise of independent farming (Leonard and Serova [forthcoming]).

Rural opposition to land reform is of more general interest in the social sciences as an example of persistent collectivism. In Russia, collectivism was thought to emerge in part from religious national tradition (*sobornost'*) and in part from peasant tradition. The most salient historical parallel in Russia, and not the only one, is widespread rural opposition to the Stolypin reforms at the turn of the last century, when peasant communes resisted enclosures and restructuring of rights to land (Pallot, 1998). Secure property rights and market infrastructure, which the current transition reforms seem to promise, as the Stolypin reforms did in the past, would seem obviously necessary for the improvement of the sector. Yet opposition, seemingly irrational, has recurred and lasted throughout the reform era.

This paper is based on previous work by the author, presenting the results of opinion polls to show evidence of the strength and nature of opposition, suddenly emerging mid-way through transition (Leonard 2000). That evidence, presented descriptively to argue that opposition to reform was individually rational, given incomplete property rights reform, showed that the state was also responsible for preserving the status-quo both historically and in the 1990s. The state failed to improve the unclear property rights, which dampen reform incentives in the rural transition environment. The thrust of that earlier work was to show that the Russian experience was part of a more general phenomenon and to shed light on the reasons why land reforms often fail to

win support among peasants and other rural producers in the developing world. This paper aims to formalise the argument: opposition to land reform and its failure to be fully implemented can be rationalised within a decision-theoretic framework, given the existence of uncertainty about the costs that individual cultivators will incur. Under the latter conditions, a crucial determinant of the decision outcome will be particular structural features of the economy that impinge on rural risk perceptions. In other words, there are particular domestic and external conditions—such as fiscal and financial crises that may accompany governments' attempts at land reform—which elevate producers' perceptions of both the economic and political risk entailed by entrepreneurial behaviour. In such circumstances, rural social organisation can develop informal rules to inhibit out-migration, which can, in turn, lead to the institutionalisation of sharecropping and diverse forms of labour bondage. Furthermore, the resulting abundance of labour and low-yield cultivation practices has the effect of discouraging technological innovation in the village. Under these conditions, reform will be the impetus for the less risk-averse, and those with skills and knowledge to choose to leave the village in search of better opportunities elsewhere. It turns out that the consequences of initial decisions could have decisive impact on rejection of reform later on. When the initial "enthusiasts" have left the farm, those remaining will, more and more, perceive fewer opportunities and a greater likelihood of high costs of accepting the reform regime. This self-reinforcing dynamic process serves to further entrench the (surviving) rural community's commitment to maintenance of the status quo. It is argued from other empirical and theoretical study that if a larger group were initially to leave, the likelihood of a more positive opinion of reform in the group remaining behind would be raised. The element of path dependence in the decision-theoretic context makes it important to speculate: what would have occurred if the government had taken up a suggestion by Karen Brooks and Zvi Lerman (1994), writing in a World Bank Discussion Paper, to create an additional one million independent farms of 40 hectares each by start-up grants of \$4,000 per unit? It is probable that rural producers would regard reform more favourably.

In Russia, the current rejection of reform by rural producers bears a similarity to historical resistance to agrarian reform, especially in the post-Emancipation period and Stolypin era. In both the contemporary and the historical periods, the Russian government failed to adjust the legal and financial infrastructure sufficiently, after redistributive reforms, to make allotments of arable securely the property of individual rural households and

therefore encourage the land market. In addition, in both the contemporary and historical eras, among the further effects of unclear property rights, overuse of the collectively controlled resources and free-riding by community members made it necessary to monitor labour. By tradition, the collective controlled labour discipline by social pressure and other reputation mechanisms, and by centralised allocation of goods as an incentive for hard work. The resulting homogeneity of the populace and historical pattern of collective action meant that there was little cost when leaders sought to mobilise resistance to reform. Individual agents thus perceived risks not only from arbitrary and excessive state intervention, but also from lack of legally guaranteed portions of land and the absence of protections against actions of the organised opponents of the land reform. Thus peasant and farm communities in nineteenth and twentieth-century Russia were readily mobilised to defend the pooling of production at primary levels, under the circumstances of unclear property rights, even when offered small compensatory benefit packages, including subsidised loans, by the government for accepting farm restructuring.

Part II of this paper describes the contemporary situation of stalemated reform and draws explicit parallels from Russian history. This part lays a background for the highly simplified model of a two-stage decision-making stage process that is developed in Part III. In stage one of the decision-making process, members of the collective decide whether to leave the collective and purchase land for an independent farm following the launching of the reform process. In stage two, the outcome of the first round of decision-making is observed by those who have not left the collective, but information about the opportunities presented by reform is now filtered through the perceptions of those who remain. The less information that is locally available concerning successful experience in independent farming, the stronger is the tendency of the results of the first-round decision process to replicate that of the first stage. The model of resistance to reform developed by Fernandez and Rodrik (1998) is adopted and extended by considering the endogeneity of the distribution of expectation regarding the (unknown) costs of accepting reform, introducing a process of adaptive learning from stage one of the sequential process. Within this framework it is also possible to show the effects of an exogenous negative influence on the perceptions in the initial stage, due to the adverse macroeconomic environment commonly associated with periods of agrarian reform, which is generated from the need to reduce subsidies and constraint spending in general. But the attempt at reform does not occur in a political vacuum, and given agrarian lobbies, the fact of resistance to de-collectivisation weakens the

political support for measures that would clarify property rights of independent landowners. At the level of the village, the reinforcement of individual pessimism and the expectations about the legal security, political viability and economic feasibility of the reform regime serves to strengthen resistance to change. Some brief policy conclusions, based on the foregoing analysis and the still valid recommendations of Brooks and Lerman, are offered in Part IV.

Part II Failed Land Reform in Russia, 1861-2000

Rural Preference for Collective Farming in Transition

In transition, opposition to land reform did not surface immediately in the wake of price and trade liberalisation on January 2, 1992. Spontaneous decentralisation of farm assets, with households claiming a share of the collective livestock holdings, led to the reallocation of labour to vegetable subsidiary plots, which were a source of commercial income. Embracing entrepreneurship in this way, households developed this secondary form of employment; others, among the most skilled and well-connected younger farmers, left the collective to start independent farms, which had been permitted since the 1980s (Leonard 1998). To assist these processes, early in transition, reformers sought guarantees of private landownership and obtained them in the Constitution (Van Atta 1993). Then, as monetary and fiscal tightening required agricultural budget subsidies were drastically reduced along with support for other sectors, and the terms of trade shifted against agriculture, increasingly harsh conditions slowed the movement to set up independent farms. Independent farms had grown by 1994 to roughly 280,000, and they did not exceed that number over the next six years; these farms occupy only 5 per cent of the arable land in the Russian Federation.

Due largely to conditions that placed an increasingly high premium on knowledge, skills, and contacts for the establishment of new farms, the slowdown was generally a consequence of the scarcity of that knowledge in rural Russia as well as of the economic environment. The collective and state farms of the Soviet era had created a factory-style mono-specialised farm labour force that did not provide the kind of work experience needed for the range of tasks required of independent farmers. By contrast, there was an inherited experience in the organisation of

lobbies and inherited expectations that those lobbies would generate new funds. Rationality and strategic behaviour rest on expectations. As shows in the new literature on transition economics, socialist expectations (for example, of subsidies and benefits) can hinder the popular understanding and implementation of a range of reforms in post-socialist societies (Csontos and Kornai 1998). Responding to the opportunity to enhance their local authority, the regional governments took some of the responsibility for subsidies from the centre, and rural opinion began to shift fully against independent farming.

Meanwhile, the government's reform in 1992-1993 had fully preserved the socialist structure of farming. The former state and collective farms could retain their assets by nothing more elaborate than re-registration as joint stock companies while being officially privatised. The continued strength of their representatives in parliamentary parties, especially the Communist and Agrarian blocs in the Duma, the farm managers, brought a halt in parliament to further reform after gaining something of a mandate of voters. The impact of the reversal was described a Russian economist, discussing the second round of discussions of a proposed Land code in the summer of 1996 (a draft vetoed by President Yeltsin),

The situation is astonishing. Originally conceived as a document that officially introduces unrestricted commercial transfers of land, the Land Code, in the version that has been approved as of now, explicitly prohibits commercial transfers of agricultural land and basically negates the right of private landownership established in the Constitution."²

The consequence has been that although individual ownership of arable land is guaranteed by the Russian Constitution of 1993 and confirmed by separate presidential decrees, and it has been re-confirmed by legislative acts in several of Russia's regions, the Duma repeatedly rejected confirmation of the right to sell arable land in its own proposed legislation (Leonard and Serova [forthcoming]). There was little the government could do, at least on the Federal level, to implement presidential decrees confirming the right the buy and sell agricultural land. Farm reorganization could not be imposed from above, since reformers were unwilling to act as "Bolsheviks in Reverse" (impose land auctions by force where they are not wanted [*Doklad* 1995]).³ As the deputy head of the State Land Committee, Valery Alexeev, described the stalemate,

The striving to prod the collective and state farms to engage in active privatisation of land has run into tough resistance on the part of farm management and, surprisingly, farmers themselves. Whatever the explanation, the reform in that direction precedes painfully. Only some regions (e.g. Nizhnyi Novgorod) have something to boast, and even there the reform has been progressing under strong pressure on the part of local authorities, something that is reminiscent of the tragic collectivisation campaign of the 1930s (Executive and Legislative Newsletters 1996, No. 46).

This narration generalises the evolution of opposition to land reform as a decision making process. The first was the initial stage where government support for those who started independent farms seemed adequate. At the outset, independent farmers received funds from budgetary resources for credit institutions and infrastructure development, but by 1994, that assistance was drastically reduced (Galbi 1995). The second stage, occurring at that point, coinciding with the general reduction of subsidies to the farm sector, also witnessed political difficulties over the passage of a Land Code guaranteeing the right to buy and sell arable land. Also, at this time, the impact of the price shock of January 2, 1992, was felt. Input prices rose and producer prices, in tandem with global commodity prices, fell, and, meanwhile, in many urban areas across the Russian Federation, consumer prices for food were fixed and grain export was prohibited. In general, with the influx of cheap imported food goods from the EU, conditions were highly adverse to the less competitive domestic production. Tight monetary policy, introduced in Q3 1994, reduced inflation but raised nominal interest rates to as high as 210% in an environment where inflation was neither expected nor well understood.⁴ Meanwhile directed credits from the Central Bank were eliminated. Due to the high credit component of farm costs, the effect was crippling. The loss of investment resources was visible in continuing depletion of the soil of nutrients—the cost/price squeeze forced producers to cut fertilizer usage. Output steadily dropped. Agriculture's share of GDP declined from 15.3% in 1990 to 6.3% in 1996. Land under crops fell by 17% between 1985 and 1995. Livestock production halved in value between 1990 and 1996. The removal of subsidies, the retreat from mechanisation, the decline in fertiliser usage and the drop in demand for forage caused cereal production to fall by 25% between 1992 and 1995 (Leonard and Serova [forthcoming]; Liefert 1997). The share of the population engaged in agricultural production meanwhile remained roughly the same, putting pressure on wages

and resulting in a sharp decline in per capita income. The wage of agricultural workers relative to the average wage in the economy fell from 95% in 1990 to 50% in 1995 (Leonard and Serova [forthcoming]).

What raised the cost of leaving the collective still further were welfare benefits of remaining a part of that association. Among the goals of collective farm members, which turned out to be illusory, was the objective of retaining state support for community services, including education, health care, and pensions, which programs had been delivered through Soviet state and collective farms. In transition, these services continued to be provided on farms, although fiscal tightening at the central and regional levels reduced amounts and the widespread bankruptcy of farms led to the diversion of funds into the farm. The intent of reform, in any case, was to transfer such services to municipal governments, but as local government reform was still at a beginning stage, municipal governments had no independent source of revenues; services were withdrawn altogether. Benefits in the community tended more and more to be provided privately, which placed even greater strain on household income.

Among benefits of the status quo in rural Russia, primary resource pooling, was continued access to communally held land and a minimum subsistence, in a legal environment where land improvement was not encouraged. According to Russian property rights law, in the 1990s, enterprise shareholders of the former state and collective farms had titles to the land. However, they did not have the actual shares, which most often were not distributed. The lack of clear, accessible and simple formal procedures for households to buy and sell land was due, as in the period after Emancipation in the nineteenth century, in part to the inadequacy and inexperience of state agencies in handling transactions in land. In both periods, there were no existing facilities for land cadastres and no market-based mechanisms for establishing land prices. In the 1860s and 1870s, land could be exchanged via the Russian commune; in the 1990s, land could initially be exchanged only through local soviets, and when these were abolished, only through the state agency, the National Land Committee, and its local branches, which managed state reserves. The economic significance of encumbrances on the sale of land is that owners of parcels cannot receive rents or obtain a profit by selling the land.

Low productivity to some extent rationalises the “survivalist” orientation of the management of large farm enterprises, which lobbies for direct budgetary subsidies and relies on the inherent subsidies that are masked as barter arrangements and soft loans with quasi-state agencies, such as Gasprom (Commander 1999; Leonard 1999). The

latter allow a fiction of state ownership to persist in a world where competitiveness depends upon full engagement with private sector activities, such as the production of seeds, the purchase of appropriate machinery, and marketing. The perpetuation of survivalist management is a form of resistance to restructuring. Although 98 per cent of the 26,878 former state and collective farms were privatised as joint stock companies by the mid 1990s, restructuring has been slow: no more than 1000 farms have undergone significant restructuring (Leonard and Serova [forthcoming]). In other words, agrarian reform has been one of the most significant failures of the transition era in Russia not because of its design, but because the Duma failed to complete it. Management reform, smaller-scale production techniques, and more efficient use of labour and capital inputs have been very limited due to the long as well as short-term immobility of the main factors of production, land and labour.⁵ To a great extent, then, even the continuing grain output decline can be attributed directly to stalemated reform of the legal framework.⁶

Under severe transition conditions both the negative and positive effects of unclear property rights were enhanced. Without the investment funds or skills for restructuring and improved management, large farms lacked crop portfolios; they suffered from seasonal volatility in prices due to the lack of information about international and domestic prices, and they accumulated arrears on wage payments as a consequence of their losses. The household, in turn, was also vulnerable to price volatility due to dependence on farm wages. Apart from wages, which tended to be in arrears for months or years (Perotta 1998), households had little outside earnings. Isolated by poor transportation networks from urban centres, farm members had no non-agricultural employment opportunities and no interest in entrepreneurship (Perotta 1998). The household had recourse only to the private subsidiary plot, from which vegetables can be grown for subsistence and marketing.

That the possession of a subsidiary plot was guaranteed by remaining in the collective farm entity made it a free good. Unclear property rights caused rent from such assets to be captured by farm members and this led to their excessive use. Turning to the plot for primary as well as supplementary income, households reallocated labour from crops to vegetable cultivation even during seasons when the labour was required for field crops. The institutional feature of this is in the laws: they failed to define as separable and freely disposable the farm subsidiary plot, as distinct from subsidiary plots located near urban centres, and they failed clearly to specify readily available mechanisms for its purchase and sale.

The conduct of households in allocating labour to the subsidiary plot may seem secondary in importance by comparison with the deteriorating situation of field crops. In transition Russia, however, the private subsidiary plot produced over half of Gross Agricultural Output with significant shares of meat as well as vegetables (GAO). Excess use of the free good thus created inefficiencies not only on the collective farm but also across the economy. Other adverse outcomes included the slow-down of out-migration of the relatively large farm population (roughly 22 per cent of the populace, by contrast with most western countries, where it amounts to 1 or 2 per cent). Rural emigration was explicitly held in check by residuals of the “propiska” registration regime (by which work permits were required for residence in an area). Workers according to the Constitution of 1993 were not bound to the land; however, it was not easy to acquire residence permits in towns. Another outcome was that under conditions of low world grain prices and high vegetable prices, there was misallocation of labour: the population was trapped in labour-intensive vegetable gardening, rather being released for commercial farming (Leonard 1999).

Preferences for Communal Landholding in the Nineteenth Century

In the course of Russian industrialisation, after Emancipation of the serfs in 1861 and before the Russian Revolution in 1917, preference for the pooling of production resources was as common as it was during and after collectivisation in Soviet Russia. Although it is more difficult empirically to represent a decision-making process over that long period, the general evolutionary similarity in opposition to reform is sufficiently striking to bear note.

After having been nearly total under serfdom, the share of villages governed by communes in Russia before the turn of the twentieth century dropped gradually, beginning when peasants obtained access to credit after the creation of a Peasants’ Land Bank in 1883. Even afterwards, the government’s support for the commune through 1903 hindered the process of enclosure. The government used the commune for its quasi-governmental role in the collection of taxes and maintenance of stability (Danilov 1976; Dubrovskii 1975). What is important for the process discussed in this paper is the stalling of land reform after 1903, when the government abolished the system of mutual guarantees of the commune, and especially after the Stolypin Reforms of 1906-1911, when the commune itself was abolished. The government sought market reform to encourage larger agricultural exports than was the outcome of pooled production under conditions of technological backwardness. By 1913, there was considerable evidence that the medium and large private farms and even the small peasant farms were more productive than the collectives.

The communes, nevertheless, resisted reform and communal forms of production and governance were preserved, despite vigorous intervention by the government, in over half of Russian villages.

As in the 1990s, in the post-Emancipation period political and legal hindrances to peasant landownership comprised the background for status quo preference. Protracted and complex arrangements for peasants' redemption payments prevented the emergence of a land market immediately after Emancipation. For a nine-year period, peasants continued to pay dues to the landlord, and instructions for settling the contractual issues between the commune and the landlord were only advisory. It was only in 1883 that redemption itself made obligatory. Also, the liberation of peasants from the landlords' personal and juridical control was incomplete. Landlords retained management rights over the commune, with rights to expel peasants.

Only technically, then, were peasants liberated. In fact, land remained a collectively owned good, and the disposal of it was tied to complex procedures involving the entire commune. The land market, as a consequence, developed very slowly. Before Emancipation, nobles, the state and the crown owned most of the arable land in Russia, but land was not sold, generally; it was exchanged by inheritance or mortgage to the state. After Emancipation, allotment land (*nadel*), along with tax obligations, were held collectively by the commune. Naturally, there was considerable leasing of land, since virtually every peasant producer had to lease land in order to have access to any meadows, forests or water, which were separated from peasant allotment land by the terms of liberation. But land sales accumulated slowly. By the end of the century, the exchange of contracts still averaged annually only .2 % of all of the arable in the Russian empire, totalling by the end of the century, 5% of all of land, which, for comparative understanding, was roughly the percentage of all landed estates exchanged in Germany annually.

To summarise, the commune, not the head of household, was the residual claimant. The peasants' rights to the land were conditional and their tax liabilities were tied to their communal obligations. This not only slowed down the land market, but made departure difficult. Exit from the collective was possible after Emancipation, but it was accompanied by liabilities and procedural difficulties. As a consequence of the way Emancipation had been designed, it took four decades for migration to become a sustained high flow to urban and frontier areas, and even then, much of it (one-third) was not permanent migration (Rashin 1940). The residual claims to land through the

commune, in other words, worked simultaneously to slow down out-migration and to pull migrants back to the land, where at least a subsistence income was secured by means of that primary pooling of resources.

Adverse economic conditions added to the binding legal constraints in the retention of preferences for collective production. The minimum size of allotment land that the households received, determined by the state according to territorial zones, led to non-market allocations, which inhibited the sale of land. In the densely settled central blackearth gubernii (provinces), peasants were left with as little as one-fourth on average of their former nadel (allotment), and, since the landlords retained the right to determine what land peasants obtained, the quality of the allotment was misaligned with the payment owed. In the north, the land allotments were larger. There was also regional diversity in income, which was affected by the amount of redemption fees owed per household. These fees were to be paid over 49 years (calculated at a capitalisation of the land's "value" at 6 per cent); but there was no effort actually to achieve a real value. The value used to determine the size of redemption payments per desiatina (1.09 hectares) was a non-market price: the level of monetary dues paid by serfs before emancipation in the region. After twenty years, over 20 per cent of all serfs had still not been allotted land (Anfimov 1993).

It is important that the preference of peasants for collective production also reflected the state's preference against migration of taxpayers and loss of control over villages. The peasants were taxed both for regular and ad hoc needs. There were chronic shortages in the budget in the nineteenth century, linked to wars and the costs of borrowing. Before Emancipation, the rural populace paid roughly 63 per cent of the direct tax revenues in the poll tax and in monetary dues on state lands, and excise taxes (Pogrebinsky 1954, p. 18). After Emancipation, as the state gradually recovered from financial destabilisation during the Crimean War, the need for ad hoc taxes grew, especially since Russia lacked a stable currency. There were new levies of indirect taxes to expand the resource base (regressive taxes such as on salt, kerosene, tobacco, spirits, sugar). Peasants paid the bulk of the land tax (on average, 20 per cent more than nobles paid). Excluding local taxes, the per capita tax burden (nominal) doubled between 1885 and 1913, while the total per capita excise tax burden tripled (Kahan 1989, p. 93). To be sure, the state reviewed the poll tax and abolished it between 1883 and, in Siberia 1899, but the share of excise revenues continually increased. In the 1890s, a lucrative state monopoly replaced the spirits excise, and repayment of foreign loans continued to be onerous (amounting by the 1890s to 40 per cent of expenditures) (Shvanebakh 1903; Fridman 1905).

The tsarist and Soviet governments were similar in their extraction of revenues from the vulnerable rural sector. Private savings were insufficient to support industrialisation, and extraordinary off-budget expenditures, including, for example, all direct and indirect state support for railroads), were substituted in their place (Owen 1991, 1995; Gerschenkron 1962, 1963; Fridman 1905; Shvanebakh 1903). Controversies over exactly how much peasant income in the tsarist era went to the payment of taxes show that the weight of taxes on aggregate was moderate (Gregory 1994); the regional distribution of trade, industry, consumption, investment, and income, hence the distribution of taxes, however, is another issue. In the blackearth areas, for example, where the land was significantly more valuable than in the northern non-blackearth areas, the tax per *desiatina* was three times greater than in the north. Meanwhile, per capita income, due to the density of settlement and land exhaustion, was lower than in the north.⁷

Rural communities also lacked formal financial institutions until the mid 1880s. Private banking was practically non-existent in Russia before the 1860s; due to legislation in the 1870s, there was rapid development of financial services and increased commercial banking. Like other industries, concentration was intense: by 1914, the industrial sector depended largely on the 43 corporative commercial banks and their branches, which provided loans and credit to industrialists. In 1883 the Peasant Land Bank was created in order to assist peasants buy land. By the Stolypin era, it was a powerful enabling instrument by which the government encouraged both the sale and the reform of the land. Peasant purchases of land expanded, and they had new access to short term credit, like merchants, in mutual credit societies for the deposit of savings and short-term loans. By 1914 almost half of all peasants were members of cooperative savings institutions. Once again, the regional factor is important, however. Despite evidence of the beginning of a transformation, lack of resources was severe in the most agricultural regions, and peasants continued to pool production resources as well as input supplies (Gatrell 1986; Kahan 1989; Dubrovskii 1975; Fridman, 1905).

Moreover, the extraction of investible surplus from the agricultural sector intensified in the Soviet era, reinforcing for the next six decades, pre-revolutionary peasant expectations about their vulnerability as individuals and collective liability for taxation. Costs of transportation of grain to the distant ports before railroads were a problem for independent farmers, since trade tended to be dominated by monopolists. Both historically and in the

present, one of the key constraints on the emancipation of the serfs, once serfdom was established, and on farming in general was the structure of transportation networks across the vast expanse of Russian, later Soviet, territory (Symons 1975). In medieval and early modern times, landlords' grain was transported on barges by boat haulers along river ways, particularly the Volga, and on its upper reaches, transloaded to carts for travel along overland winter roads and canals to Moscow and St. Petersburg. The rivers flowed south to north, enriching both the agricultural regions along the lower and middle Volga, which supplied Moscow and St Petersburg and the non-agricultural provinces further en route along the Volga (White 1975). It was by action of the state at mid-century, that the trade routes were drastically and suddenly changed due to the construction of railways, linking the more fertile grain-producing regions in western Siberia and the Southeast more directly with Moscow and from there to St Petersburg. This not only impoverished the regions lying along the Volga within a decade, but developed new mechanisms for the state to enforce procurement in the new territories as well as the centre through the monitoring and pricing of storage at rail centres and the rail transport. It was not until the early twentieth century that regionalisation of machinery production allowed mechanisation began to spread across the central farm areas, where advancement had been delayed both by the legal framework of unclear property rights and the transportation "improvements" that liberated the grain trade from the river ways and canals, as beneficial on aggregate as that was to the economy as a whole (Spechler 1980).

The dominance of servile production required for a minimum subsistence in some areas guarantees of landlords' and state aid during emergencies; this too had a geographic aspect. Emergency relief in times of famine under the condition of lack of adequate transportation and scarcity of officials required the centralisation of procedures. Access to networks and knowledge of channels by which emergency aid could be provided were an essential element in village/state relations, and this reinforced the need on both sides for collective management of resources. The particular skills and contacts required also led to rents that could be captured on the part of those who handled emergency resources, and this reinforced the political structures that benefited from collective agriculture.

In the Soviet era, collective and state farms depended for many decades on centralised distribution of off-farm supplies of feed, fuel, fertiliser, and machinery (and machine maintenance), deliveries paid for by non-market

centralised exchange. Input supply bottlenecks caused by delays in production and transportation were decisive in their negative impact on production plans on-farm. This was combined with the failure of the system to mobilise services and parts at the levels needed on farm, which led to waste and had a large impact on farm efficiency.⁸

The Khrushchev and Brezhnev era reformers acknowledged coordination failure in the collective and state farm system. At that time, the Soviet state cut the costs of inputs and arranged for extensive new investments, which concentrated almost exclusively on input supply. However, this produced further coordination failure in downstream activities, including processing and retailing, which were undeveloped and insufficient to meet the needs of an advanced society (Brooks 1984, 1990). For reference, an equivalent problem developed in nineteenth-century Russia due to state procurement, which crowded out private development of local retailing infrastructure.

In the post-Soviet transition era, former collective farm directors and members, unused to private marketing channels, which are developing slowly and are inhibited both by the prevalence of barter and by quasi-governmental activities of monopoly suppliers in the grain market, find their access to markets and transportation and the monopoly in part by the state and in part by others of storage infrastructure a major constraint on production decisions. Where the situation is eased by better access, that is, where the potential rewards may outweigh the risks, independent farming has spread more widely than in areas where transportation and marketing are inhibited by the state or other monopoly suppliers (Leonard 1999). Failure to overcome these problems inherent in the geography of Russia has been a striking continuity over long periods of Russian history, and it has recently been the subject of special study (Ioffe and Nefedova 1997).

Resistance: 1860-2000

As a form of action, the balking of farm communities at the idea of selling land in the 1990s has little in common in idiom, at first glance, with the violent confrontations between peasants and landlords in the nineteenth and early twentieth century. The numbers of peasant revolts attested to the value attached to violent collective action by peasants. There were limited costs to commune leaders in mobilising the larger group. Any kind of state intervention, where the promised benefits were not well understood, could evoke resistance. Indeed, when rural welfare seemed threatened, virtually the entire rural populace could be mobilised, and so it was in the interests of the state and the landlords to use the collective to prevent that from happening. In the nineteenth century, resistance

also took the form of labour slow-downs, absenteeism, and accumulation of household arrears to landlords and the state. It is these forms of collective action that have a greater similarity to the problems of labour discipline and arrears on transition collective and corporative farm enterprises. To be sure, in the 1990s, the protest of farm communities is expressed mainly by voting behaviour and through local political leaders who negotiate for regional and local budgets and farm policies with ministers. Farm communities, through their directors, also apply pressure through private lobbies at the federal and regional levels to raise subsidies and avert restructuring and other forms of state support to individual entrepreneurship, including the free disposal of land.

These protests have much in common with nineteenth-century resistance, even though they were well organised, rather than spontaneous, and non-violent. Like classic solidarity in agrarian opposition to local and central authority, in a dynamic familiar to historians, sociologists, and anthropologists, rural producers adhere to communal leadership. The collective as a relatively isolated unit, represented by its political leaders, preserves its isolation from market information in a self-reinforcing process. In the Stolypin era, numerous communes resisted reform in a collective response against government intervention (Danilov 1976; Pallot 1998). As discussed below, transition circumstances have been sufficiently harsh to renew strong status quo preference under the leadership of collective organisation.

The resurfacing of this collective resistance to land reform shows how a pattern of social political behaviour might take root, disappear, and then reorganise itself, even though its economic performance is sub-optimal, even destabilizing to the economy in a financial sense. The state and collective farms of the Soviet era, called from the 1960s on the Agro-Industrial Complex (AIC) were by no means the same kind of organisation as the Russian commune, and the two had different kinds of production procedures. Their similarity rested in the constraint on market coordination of downstream and upstream activities through producers who did not entirely make their own decisions. Beginning in the 1950s, the Soviet government began to rethink this inherent disability of collectivisation and launched a variety of partial, incentive-based reforms without going so far as to dismantle the system. Private agriculture was expanded within bounds, sufficient to satisfy rural and urban demand for additional income through entrepreneurship and to improve the food supply. Similarly, in the nineteenth century, the peasant *mir* was left relatively unaltered in regard to its constraints on population mobility after the abolition of serfdom in

1861, despite the government's awareness of its impact on the rural economy. The government exploited the commune rather than dismantled it.

In the tsarist and Soviet eras, to recapitulate my central observation, the commune and the state and collective farm became an agency for monitoring production and providing the state with what was owed to it. Although the notion of collective responsibility lost force in law briefly under Stolypin, when the commune spontaneously re-emerged in the 1920s under the NEP, it was again appropriated by the state as a mechanism for control. The codex of December 1, 1922, (in Ukraine, Georgia, Belarus in 1925) made land the collective property of the worker/peasant state. Limitations were placed on private (kulak) rights, and as the agencies through which the state and land committees regulated disputes and levied taxes, collective and cartel' forms of production were given tax relief. After collectivisation in the 1930s, rural communities were more directly subordinated to central authority, without rights of planning production or even out-migration (passports permitting departure from the collective were issued to collective farmers only in 1974).

The subordination of the collective peasant or rural producer entity to the government, then, in each successive era, was promoted by the commune's dual function. In a classic example of how the principle/agent problem can be resolved at low cost by reputational means, it simultaneously served to control and to represent the rural community. Belonging to the commune/collective was, in a sense, as close as rural dwellers came to having the protection of statutes and rights in successive land codes. Although it was an entity that could be taxed, it was a convenient vehicle for the distribution of subsidies. The collective farm (like the industrial firm) was easily used for the delivery of a variety of federal programs, benefits to the rural population. There were, of course, a myriad of other persisting norms of behaviour, also called "peasant institutions," ranging from periodic repartition of holdings, strip farming, household division, patriarchal family structure, universal marriage and high fertility, casual non-agricultural labour and target earnings, subsistence farming and self-exploitation). Whereas many of the rural commune's institutional features were transformed or discarded under the influence of rural per capita income growth – e.g., as was the case with universal marriage and high fertility (Leonard 1990)—we see that such has not been the case with regard to the historical functioning of governance that made the commune the natural mediating institution for economic control and resistance in relations between the individual cultivator and the Russian state.

Perhaps one of the most important benefits to risk-pooling, however, was in informal lending institutions, a positive externality to the landlords' and state's use of reputation in small communities to guarantee the payment of taxes. The pooling of resources in a small homogeneous culture eases the high seasonal demand for credit in agricultural communities. Robert Townsend's (1995) research is useful in illuminating the natural compatibility of such a collectivist system with the conditions of low-income cultivation problems. Examining mechanisms of shared resource allocation in agriculture in many low-income situations, Townsend points out how risk-sharing smooths income. In India, for example, he found that in some villages present household income has a relatively low influence on present household consumption, in view of the massive amount of borrowing and lending that went on (p. 92).⁹ Generalizing from Townsend, as well as narrative and statistical records on Russia, subsistence conditions in the rural sector would have encouraged resource pooling and informal arrangements for income smoothing over time. Peasant institutions internalised these redistributive transactions, and both organised and coordinated negotiations with authorities over taxes and procurements. The exchanges among households proved useful. Moreover, as their removal would raise many questions about enforcement of intra-communal contracts that remained unliquidated, the inertial force favouring the status quo was strong.

Part III Modelling Resistance to Reform with Adaptive Learning

The Fernandez-Rodrik Model

Recent theoretical papers by Fernandez and Rodrik (1994, 1998) deal with an issue of wide policy relevance in the developing world and are also germane for understanding the Russian transition experience: why might reform that is in principle efficiency-enhancing, such as trade liberalisation, be opposed by a majority, even though the majority would stand to benefit from its general implementation? The Fernandez-Rodrik analysis focuses on individual specific uncertainties, mainly about the costs of retooling to adapt to the post-reform environment, and shows how individual decisions under uncertainty can frustrate rational collective response to reform measures.

The link between individual rationality and collective action is critical in economic theory. Efficient collective “choice” is distinct from individually rational behaviour. As defined by Arrow (1951), rationality in individual decision-making and behaviour can lead to irrational outcomes in collective behaviour. But how? Although acting rationally as individuals, peasants in collectives can produce outcomes that dampen the impact of market forces; by voting or other means of influence, peasants can succeed in retaining collective/corporative institutions, based on extended kinship and common property as well as redistributive institutions (Bates 1990; Scott 1976; Popkin 1979). Scott (1976) was among the first to examine the rational aspect of peasant resistance by introducing the concept of risk aversion into the analysis of such behaviour. He argued that peasants generally would generally prefer organisational arrangements that provide low but certain incomes over ones that yield a higher average income, but also increased risk. Since Scott’s view fails to link this individual behaviour to the possibility of individual participation in collective action, another line of explanation is drawn from the theory of collective action (Olson 1965; Hardin 1982). Collective organisations can exhibit strategic behaviour within the guise of ethnic or peasant demands. The theory of collective action thus would account for rebellions in response to reform measures by the state as the actions of organised interest groups through historically based ethnic or cultural institutions: the transactions costs of organising are steep, and the appropriation of existing social organisation helps to overcome the free riding behaviour that would otherwise block collective action (Bates 1990).

In this paper, the argument is for understanding rural producers’ behaviour at both the individual and group level as rational from the perspective of the evolutionary accumulation of “knowledge” about complex and imperfectly observed economic and political processes (David 2000). Ultimately, redistributive collectives persist precisely because group leaders and lobbies at the level of the government to achieve political interests exploit them organisationally, and this is strategic behaviour on the part of the leaders who can offer benefits in return for concessions by the state (Olson 1965). What is contended here, however, is that an explicitly dynamic framework of analysis is called for, in contrast to the static theories that have dominated the economic literature on this subject. Only the first stage of an extended interactive process occurring between the state, the individual producers, and the collectives, set in motion by a reform initiative, will have taken place when further decisions by individuals that could either accept or halt successful implementation are made. The minimal framework of analysis must allow for

a second stage, in which resistance to reform either dissipates or becomes stronger, possibly through opposing collective action.

The basic choice facing individual economic agents is whether to remain within the collective farm entity or switch to another kind of farming or sectoral employment. This choice resembles in some respects the one in Fernandez and Rodrik (1994, 1998) to illustrate the possible defeat of trade liberalisation and other similar reforms in the developing world, regardless of whether these policies are introduced by a legislative process or by an authoritarian ruler. The argument here begins with their model, according to which individuals are initially uninformed but subsequently gain more information about alternative choices and decide accordingly on the basis of a calculation of expected net benefits. The cost that individuals face in accepting reform in the Fernandez-Rodrik model is that of retooling for a new job in another sector, which, it is supposed, would be collectively efficient for them to enter under the reformed regime. This cost can be determined exactly only after a preliminary screening activity, which requires an initial non-recoverable investment by each agent. If agents do not expect that the initial investment will be justified because, then, the uncertain additional costs of retooling will be revealed (a second stage) to be too high, they will not accept the reform in stage one, because the screening “investment” will appear to be a pure tax. The individual agents can represent a firm, that is unsure about the future structure of its costs, or an individual, who is unsure about the nature and costs of retraining for an unknown position in a firm, to which relocation would be required after the liberalising reform. This set-up can be extended, as we shall see, to capture special features relevant to the case of land reform.

The Fernandez and Rodrik model hypothesizes a two-sector, perfectly competitive economy in which each sector uses a constant returns-to-scale technology to produce a distinct good, X or Y, using Labour (L) as the only factor of production. Workers produce different products, X and Y:

$$X = L_x / a_x$$

$$Y = L_y / a_y$$

and

$$L_x + L_y = \bar{L}$$

where the labour input coefficients are

$$a_j > 0, j = x, y.$$

The costs of relocating between sectors are a known investment cost q and, once that cost has been incurred, an additional unknown individual specific cost c_i is revealed. The distribution of c_i , $f(c)$ is assumed by Fernandez and Rodrik to be known.

When q has been incurred, the worker/entrepreneur decides whether or not to switch sectors, depending on the difference between wages, that is, whether that difference will cover not only the initial but also the additional investment.

$$\text{Let } \tilde{c} = \tilde{w}_x - \tilde{w}_y$$

where \tilde{w}_j is the wage rate in sector j that results from the reform. The wage rate differential is given exogenously (its dynamic being determined by a reduction in the tariff level). The worker would decide to incur the general investment cost if the expected net benefit from doing so is non-negative, or

$$F(\tilde{c}) \left[\tilde{w}_x - \int_{\underline{c}}^{\tilde{c}} f(c) c dc [F(\tilde{c})]^{-1} \right] + [1 - F(\tilde{c})] \tilde{w}_y - q \geq \tilde{w}_y$$

where

$$\underline{c} \geq 0$$

...(1)

is the infimum over the values taken by c_i and $F(c)$ is the cumulative distribution function. The left-hand side of equation (1) represents the expected income gain when q is incurred, which is the probability-weighted average of the amount by which the wage-rate in the new sector (x) exceeds the expected retooling costs and the wage rate in the y sector. The probabilities $F(\tilde{c})$ and its complement are those that the uncertain costs will turn out to be so large as to make the switch from y to x unjustified. The right-hand side of equation (1) is the (certain) level of income in the absence of the initial fixed investment, q .

Rearranging terms, one obtains

$$[\tilde{w}_x - \tilde{w}_y]F(\tilde{c}) - \left[\int_{\underline{c}}^{\tilde{c}} f(c)cd c + q \right] \geq 0. \quad \dots(2)$$

In this framework, the reform (reducing the tariff level) changes prices from P to P^* , the price ratio at which individuals are indifferent between accepting reform and incurring the cost and not; c^* is exactly that level of \tilde{c} , such that

$$\tilde{c}F(\tilde{c}) - \left[\int_{\underline{c}}^{\tilde{c}} f(c)cd c + q \right] = 0.$$

That is, since the purchasing power of the wage of an individual in sector y is unchanged in terms of good Y but strictly lower in terms of good X, these individuals (being indifferent to switching) must have an expected real income after reform that is lower than that which they would have without reform, i.e., the status quo. Fernandez and Rodrik thus show a rejection of reform (by majority vote) when $L_y^0 \geq L_x^0$ (Fernandez and Rodrik 1994, pp. 375-379).

This model may be useful, even as a guide for empirical work. To be sure, there are many sources of problems with this kind of social choice theory when applied to empirical data. McKelvey (1976) has even shown theoretically, that any outcome of social choice can be defeated, since political decisions represent arbitrary choices (Bates 1992, p. 45; McKelvey 1976). Others have observed that in practice, policies tend to be shaped as rules and procedures that accumulate into outcomes (Levine and Plott 1977; Shepsle 1979; Shepsle and Weingast 1981). The significance of the Rodrik-Fernandez model, however, is that it directs our attention to the role of agents' beliefs about the distribution of unknown costs, the eventual realization of which will either justify or fail to justify incurring an initially known investment cost. It thereby opens a way in which the role of experience-based learning in belief-formation may be brought into the analysis, as an historical factor conditioning responses to economic reform proposals.

The relevance of the two-period structure of the Rodrik-Fernandez model should be quite transparent in the context of our preceding discussion of land privatisation and the proposed transformation from collective farming to individual cultivation. The individual state and collective farm members face a two-part investment decision: the first part involves applying for a private holding of land, and that entails withdrawal from the state or collective farm, and thereby sacrificing access to the resources that are being distributed to the members, essentially as common rights. These include not only the particular "subsidiary plot" that the family has been cultivating on the collective's land, the fertility of which, typically, would have been raised by their past cultivation practices in applying fertilizer, growing legumes and other nitrogen-fixing crops, and so forth. Also sacrificed would be the annual allotments of supplies of fertilizers and other marketed farming inputs (e.g., insecticides, tools) that the individual households have been accustomed to receiving from the collective or state farm's management – or, more realistically, that by common consent of the community and the manager are being taken for private use from the input provisions that the state delivers to the collective.¹⁰

We may suppose that the value of those inputs transferred from the collective for private use, along with the sacrificed "common rights" in the form of the differentially greater fertility of garden plot land (vis-à-vis the arable fields that they might expect to receive as their holding of private land) are known ex ante; that they constitute the fixed initial investment cost, θ . Those costs would be 'sunk, or largely irreversible, whether the ex-farm member were to leave agriculture altogether and move away to pursue some urban occupation, or were to carry on as an independent farmer.

For purposes of exposition, we may continue to assume -- in the spirit of the Rodrik-Fernandez model-- that the a priori expectations of the benefits from going independent in sector X (private farming) dominate the opportunities available to these cultivators in some non-farming occupation, Z, for which they have neither personal experience-based skills, nor (much) access to market information. The differential between earnings rates in independent and collective/corporative farming (\tilde{w}_x and \tilde{w}_z) is what will be compared with the individual agent's estimate of the uncertain costs (c) of training, and other re-adjustment outlays that pursuing farming outside the corporative farm will require of them. In the Rodrik-Fernandez analysis it is supposed that the agents accept these costs as being governed by a known probability density function, $f(c)$, which is defined over the known domain (\underline{c}, \bar{c}). But, it is a simple matter to extend their framework by asking how those latter (lower and upper) limits on the uncertain distribution of costs come to be known. This is the line of considerations that we shall pursue in the following analysis.

To begin with, it seems quite reasonable to suppose at any point in time the individuals belonging to a particular social entity, such as a village commune or collective or state farm have some historically formed and socially communicated beliefs about the cost range, (\underline{c}, \bar{c}). But, as beliefs of that kind are not dogmatic, they will be subject to change on the basis of information about individual experiences and knowledge of external economic and political conditions. Adaptive belief formation is what is at issue here, and while such a process must be viewed as taking place at the level of the individual, we should recognize that the households are embedded in a social (community) network that acts to filter, pool, and retain such "knowledge" in collective memory, whence it will be presented for the guidance of the individual decision-takers.¹¹

Of course, there might be prior beliefs also about the shape of the distribution function governing those costs, $f(c)$. In order to keep the analysis very simple, however, let us suppose that there is a common maintained belief that this distribution is *rectangular* over the relevant domain. In that case, the expected cost will be readily found from the arithmetic average of the lower and upper *extrema*, and our concern with the possibility of experience-based learning can be focused upon the process through which historical experience and current observation influences villagers' beliefs about those cost-limits.¹²

A variety of alternative formulations for that process presents itself. One may well hesitate embracing the conceptualisation of the village commune as an information processing entity and prefer to view it simply as an aggregator function that gives rise to a distribution of individual opinions in a particular, restricted population. From such a distribution the individual members themselves will be able to draw samples of opinions on such questions as the magnitude of the second stage costs and use that data to help inform their own decision process on the desirability of undertaking the irreversible, first-stage investment of θ .¹³ Let us then consider one formalisation, the sheer simplicity of which proves attractive for heuristic purposes: at any given moment in time, the operative limits of integration (\underline{c}, \bar{c}) that will determine the expected (second-stage) costs, $E(c) = \int_{\underline{c}}^{\bar{c}} cf(c)dc$, are obtained by the individual agents as the means of the distributions of *extreme values* (lowest and highest) that are found when individuals in the village sample the distribution of opinions (beliefs) of the other commune members about the magnitude of C , and pool their findings.¹⁴

In the situation of the Russian village in transition, the agrarian community can be supposed to start with little direct experience of the costs of adjusting to, and continuing on as independent farmers. The initial array of opinions about the costs that this will entail would, therefore, be likely to reflect a mixture of other considerations. Some opinion would be coloured by memories of the experience of "kulak" farming in the era before collectivisation under the Soviet regime, whereas others would represent extrapolations from the experience of commercial marketing of surplus produce from private plots in more recent times. In addition, the initial distributions of opinions would most likely have been shaped by the expressed "expert" views of the local manager of the collective or state farm. The latter, however, are not neutral experts, and so their views about the costs of adjustment that

operating as individual entrepreneurs would impose upon those individuals whose efforts as workers they have been responsible for directing, are likely to be biased upward. Even if such exaggeration were not motivated by a personal economic interest in perpetuating their own managerial roles, which it would tend to do by reinforcing individual commune members resistance of privatisation, it is not implausible to suppose that managers harbour an inflated impression of the gap between their own competence and the managerial capabilities of the workers, and they therefore would quite "naturally" offer an upward-biased estimate of the adjustment costs that the latter would incur in switching to the independent owner-cultivator sector. These aspects of the context in which the initial distribution of opinions about the second stage costs of privatisation help to account in rational terms for the limited initial subscription to land privatisation and related "reforms" among the collective's members.

So much for the initial response. What may we suppose the agents in our model would learn subsequently. Which might modify their cost expectations and conceivably persuade those who resisted reform at first to reverse their decision and decide in favour of separating themselves from the collective. Once the privatisation reforms are initiated, there would be some change in the state of the remaining members of the collective with regard to their information. It is possible that further data would become available from the experiences of those members who have left the corporative farm. That supposes, to be sure, that they still maintain communications with former members who are engaged in independent farming. It is questionable, however, how good those communication links with former members will be and how heavily the information they transmit would be weighted by those receiving it on the corporative farm. Notice, then, that if such data are lost, or tend to be filtered out, there will be a biasing effect upon the mean of the distribution of beliefs among the remaining villagers, because those who left the collective would tend to have been drawn disproportionately from the part of the opinion distribution that initially believed that (for them at least) c would be low.

Their departure, therefore, would make it increasingly likely that the lowest estimate of c appearing among the opinions in the population of survivors would have been shifted upwards from its initial level. Other things remaining unchanged, that would raise the mean of the distribution of beliefs in the village regarding c itself. Now notice that the expected minimum and maximum values found in a given size (random) sample of opinions -- such as that an individual would draw from the distributions of beliefs, $g(c)$ in the population of fellow-villagers -- is an increasing function of the mean of the underlying distribution of beliefs. Consequently, the effect of the hypothesized exit process (in truncating the belief distribution from the left) would be to shift upwards the expected extreme value of sampled opinion, and thereby raise the estimated (mean) level of (second-stage) costs of adjusting to independent farming.

This constitutes a form of negative feedback that would tend to operate to discourage further "defection" from the collective (acceptance of privatisation reform), especially if the initial response had been numerically limited so that only a few households left the collective when the option first became available. By the same token, were a large group to have left at the outset, it would be less likely that their experiences would be filtered out from the information affecting the beliefs among the surviving collective (corporative) farm members. So, if their expectations of low costs of adjustment had proved justified, the flow of that information would have an effect

opposite to that of the selective exit process considered above. This would moderate, and conceivably, more than offset the tendency for the expected cost estimates, $E(c)$, to move upward over time.

What the foregoing analysis suggests is that the dynamic evolution of the response to land reform, to the extent that it is dependent upon or driven by a process of revised expectations about the costs (and benefits) of opting for privatisation, may be highly "path dependent" -- the eventual outcome being contingent but strongly governed by events along its path. Furthermore, as is characteristic of a large class of dynamic stochastic processes that cannot shake off the influence of past events, the dynamics of reform implementation—as we have modelled the adoption process here—appear to be strongly conditioned by events at or close to the outset of the implementation process.¹⁵

This crux of the foregoing explanation of the stalled implementation of land privatisation rests upon the idea that with differentially greater exposure to "stayers" than to the "movers," the views about the economic attractiveness of independent farming among those remaining part of the collective/corporative farm would tend to diverge further and further from the perceptions and opinions of those who have already exited the collective/state farm sector. That such a difference exists has been found from opinion survey results (see Leonard 2000): the views of nationally sampled independent farmers surveyed in 1996 differed markedly from those of members of the former collective and state farms and of farm directors in regard to the benefits of land reform and land sales. It is of course possible that this divergence would be induced by the well-known psychological phenomenon of minimization of cognitive dissonance, which, in view of the irreversible nature of the investment entailed in exiting from the collective, would lead those who had left to find good ex post reasons for their having chosen independent farming.

Yet, this is not the only likely mechanism that yields a divergence of opinion between the "stayers" and the "movers." It is found, not surprisingly, that the surviving corporative farm members (the "stayers") tended to be older than those who had left, and so, their pessimistic outlook in this regard would be more likely to have been coloured by sharper historical memories preserved in the commune concerning the political and economic risks to which individual entrepreneurs were exposed in the early Soviet era, and, before that, in the time of Stolypin's reforms". That the village commune actively preserves folk memories reaching back to the historically remote events of the immediate post-Emancipation epoch of Russian agrarian experience seems rather more far-fetched.

But it may be pointed out that insofar as those memories were recent enough to have affected collective resistance among the peasantry to land reforms in the early twentieth century, their influence would persist indirectly, have become embedded in later recollections of such resistance.

The latter argument serves to make it clear that the information effects of selective exit is hardly the only set of considerations germane to the "learning process" that affects the dynamics of adoption of the independent farming option.¹⁶ Yet we have not exhausted the range of influences that should be included in the analysis. The political outlook for the success of privatisation also must matter, if only because it would influence expectations about the security of tenure of private land holdings. To the extent that the reform is resisted at the outset, the prospects are diminished that the state will adopt credible safeguards for the property rights of former collective and state farm members who have become independent farmers. That, in turn, would have the effect of raising the expected costs of "private ordering," organizing some defence – whether individual, or in collective action among an emergent "kulak" element in the countryside -- against subsequent efforts at re-collectivisation. Strong initial resistance to land privatisation based on perceptions of high second-stage costs, therefore, would operate via this channel as a self-reinforcing effect, thereby contributing to the path dependent character of the dynamics of the land reform/privatisation process.

The immediate conclusion to which the foregoing arguments lead is that the recent rejection of land privatisation reforms by the overwhelming majority of the Russian rural populace ought not be interpreted as a manifestation of irrational preferences for collectivised production and all that is entailed, but, instead, is more plausibly the consequence of rational micro-level calculations that have been conditioned by historically formed expectations and a self-reinforcing process of opinion revision. This interpretation also may apply equally in the case of previous episodes in Russian agrarian history, as well as to other instances of resistance to land reform in the developing world. One important background condition may be seen to have been common to the recent experience and to the late nineteenth episodes of peasant resistance to pressures for dissolution of the agrarian commune regime in Russia. Both during the transition period, and in the era 1870-1900, producers were confronted with trade liberalization and plummeting international prices of grain products. These background conditions surely contributed expectations of weak benefits, which, when added to the adverse expectations of adjustment costs upon

which the discussion here has been focused, served to reinforce the rural population's rejection of reform measures and adherence to the *status quo*.

V Conclusion: The Russian Rural Community and Market-Based Land Reform

Historically, as in the 1990s, there was substantial agrarian opposition to land reform in Russia. It has been argued above that this was not irrational, nor can it be adequately described as peasant or rural cultural affect; it resulted from expectations among a large number of members of collectivities whose perceptions of the balance between the gains and costs of independent farming were biased in a negative direction and reinforced by the partial, halting subscription of the populace to the new regime of landholding. The rural populace tended to fear that speculators would purchase all the land and that the tasks required for individual farming were beyond their experience and training as well as energy level (Leonard 2000). They feared that there would be no one to help them learn about farming, and that in the environment of extremely high interest rates, credit would not be available to them. They understood that property rights were unclear and unhelpful, and that this also increased the risks attending entrepreneurial farming. In short, the analysis we have developed on the basis of the Rodrik-Fernandez (1994, 1998) model finds support on the empirical side from recent opinion survey data. Individual-specific risks, associated with requirements for retraining and the costs of doing something new, can generate initial status quo preference, which will tend to be reinforced by subsequent adaptive learning and belief formation.

The policy implications of this conclusion are that the households' response to reforms is likely to be a further retreat into the safety of income smoothing from the output of their subsidiary plots. Russian peasants had struggled in the past against confiscatory policies by the tsarist governments and activities of landlords under the condition of unclear property rights. In the 1990s, similarly, rural producers sought to retain control over their limited assets, a free good, given that the prospective property rights in land were insecure.

That Russian rural dwellers should now resist de-collectivisation, after having resisted collectivisation in the 1930s and held on to their allotment land against the party line for sixty years, would seem to be evidence of inconsistent preferences,¹⁷ which is the definition of the kind of irrational behaviour that challenges the viability of

microeconomic models and predictions. In this article, it has been argued that the rejection of land reform is a complex phenomenon. For both the historical and the modern period of Russian history, communal institutions survived in part because they served strategic purposes of community leaders and of the state itself under conditions of financial crisis and inadequate property rights legislation. Equally important, however, they survived because as the reform proceeded, opinions were formed and formed again on the basis of informal conversations within a sample increasingly biased toward a single, negative extreme. Some policy implications seem clear enough. For further land reform and restructuring to appeal to the larger rural community, the government should focus on reinforcing the security and clarity of procedures for selling the land and on reducing barriers to information flows between those who are successfully established in the independent farming sector and those who remain on collectives. This may not be enough to persuade the older, more risk averse “stayers”. So further measures might well be directed toward providing subsidies for retraining, loss offsets and other targeted, non-distortionary rural income support for those who undertake the move to private farming.¹⁸

The larger policy message, which may be pertinent in designing land reform programs elsewhere concerns the importance of providing timely incentives and loss limitation provisions designed to secure a large positive initial response from the rural population. That strategy is one that would seek to use the path dependent nature of the dynamics of adoption to overcome the feedback effects that might otherwise result in a “stalled” land reform.

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¹ The suggestion was made not for reasons introduced in this paper but to resolve problems of the costs of credit in early transition Russia.

² B. Boiko, "Russian land Ownership—an endless story," *Kommersant-Daily* (Sept. 2, 1996), p. 2.

³ This was the view of V. F. Vershinin, Duma Deputy of the Agrarian Lobby, in 1995, and Maksim Boyko, Deputy Head of the Russian Privatization Center.

⁴ Real interest rates had just become positive.

⁵ For the laws on reorganization, see *Land Privatization, Annexes* (1995); see also Kuznetsov (1996), the chapter on farm restructuring, which consists only of an explanation of government decrees on acceptable pay scales for technical workers and how to monitor economic decisions of the collective.

⁶ Too often, the output decline is discussed only in terms of single sectors within agriculture and demand and supply effects. However powerful those effects may be, such as the decline in demand for livestock production, the larger problems are institutional. Demand-side problems are significant, but there are also long-term structural and interdependent market failures in the current state of agriculture (Liefert 1997).

⁷ See Table I, below, for 1897-1898, a year of harvest failure, from Shvanebakh (1903, p. 154).

Region	Peasant income per ruble of expenditure (in kopecks)
Northwest	131
Baltic	129
South	92
Southwest	89
North	82
Central Industrial	81
Central Blackearth	72
Ukraine	47

⁸ Personal observation to the author by D. Gale Johnson.

⁹ Such a situation is also predicted by a model explaining overlapping intergenerational and dynastic family (or government) expenditures, that requires only that homogeneous preferences be strong and extended over family or friendship networks (Starrett 1983)

¹⁰ For discussion of the effects on official state farm production of the reallocation of inputs from collective farming to private plot use, see Leonard (1999).

¹¹ The performance of models of recurrent decision-making guided by Bayesian, and pseudo-Bayesian adaptive belief formation about complex stochastic production technologies has been examined by David and Sanderson (1997), and their significance for evolutionary interpretations of "learning" is further discussed in David (2000). But those non-Markovian, path dependent models of learning are specified for the individual agents, and do not consider the effects of information pooling among them -- except to suggest that the latter might tend to smooth out the sharp peaks in individual's prior probability distributions on the alternative states of nature that are under consideration.

¹²The assumption regarding the shape of $f(\cdot)$ is made purely for expositional convenience, and the conclusions of the analysis that follows will hold under quite general specifications. I am grateful to Paul David for suggesting this simplifying specification, and use it in the following discussion of results on extreme value distributions, to which it leads naturally.

¹³ They may draw repeated samples, or, more plausibly, it can be supposed that they exchange information about the results. In the following analysis it will be assumed that the "pooling" of sample results leads to commonly held (mean) estimates of the maximum and minimum costs (\bar{c} , \underline{c}).

¹⁴ Assuming symmetry among the commune members, it may be supposed that they, or some subset of the population, each will randomly draw the same size sample of opinions. The pooling of their findings with regard to the maximum and minimum values (in each sample) yields the *expected* extreme values that we assume set the integration limits, and which, under the rectangular specification of $f(c)$ directly implies the (mid-point) expected cost estimate $E(c)$. As some further use of this particular formalisation will be made, below, it is worth noting at this juncture that, for a well-behaved distribution of beliefs about the upper limit \bar{c} , $g(\bar{c})$ -- which is not the same as the specified actual probability density function $f(c)$ --the expected extreme upper limit will be an increasing concave function of the (uniform) sample size; and, for symmetric unimodal distributions, it will increase linearly with the underlying distribution's mean and standard deviation. The converse applies to the expected value of the lower extremum. See, e.g., Gumbel (1958) on extreme value distributions; and, on applications in the context of learning, David and Rothwell (1994).

¹⁵ On path dependence, see, e.g., Arthur (1989, 1994); David (1985, 1988, 1994, 1997).

¹⁶Under more general assumptions, it would be appropriate also to take account of the marginal costs of sampling opinion from those who have left, compared with those who remain in the village, which tend to result in larger samples being drawn among the latter sub-population than among the former. If we suppose further, that the two sets of opinions are weighted in favour of those reflecting the (nominally larger) "stayers", the differences in sample size could have an effect reinforcing resistance, even in the absence of the selective exit effect. Everything

else remaining the same, the extreme values of a larger random sample will be bigger (in absolute magnitude) the larger is the sample size, as is noted in the previous footnote. If we rejected Rodrik and Fernandez' (1994, 1998) (implicit) assumption that the agents are risk neutral, and, instead, developed the model under the assumption of risk aversion, it would then follow that the widening of the estimated range between \underline{c} and \bar{c} would itself work to strengthen rejection of the independent farming option. Under the present risk-neutrality assumption, however, the symmetrical outward displacement of the limits of integration (\underline{c} and \bar{c}) would leave the respective $E(c)$ unchanged for both the "movers" and the "stayers". Consequently, in the aggregation of those two sub-samples of opinion, there is no "sample-size effect" on the overall estimate of expected (second stage) costs.

¹⁷ Instrumental rationality is defined as making consistent choices, or those that satisfy a preference ordering.

¹⁸ This suggestion was made out of concern for the high capital start-up costs in a discussion paper by Brooks and Lerman (1994).

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