Dealing with Economic Stress Through Migration: Lessons from Nineteenth Century Rural Sweden

Dribe, Martin

2002

Lund Papers in Economic History

No. 79, 2002

Population Economics

Dealing with Economic Stress Through Migration

Lessons from Nineteenth Century Rural Sweden

Martin Dribe

DEPARTMENT OF ECONOMIC HISTORY, LUND UNIVERSITY

Dealing with Economic Stress Through Migration:
Lessons from Nineteenth Century Rural Sweden

Martin Dribe

Abstract
Preindustrial society was characterised by vast uncertainties due to harvest failures and fluctuations in prices of basic commodities. These economic fluctuations had severe effects especially on the poorer segments of the population as shown, for instance, by the increased mortality following economic crises. This article examines the extent to which migration could be used as a measure to deal with economic stress by sending individual family members away, or relocating the entire family. A micro-level approach is taken, where a longitudinal dataset at the individual level are used in the analysis of a rural community in southern Sweden for the period 1830-1865. The results show that migration did not respond to economic stress for the landless people, which could be explained by a lack of available alternatives for the migrants, which in turn implied that migration was not an effective way of dealing with economic stress.

Lund Papers in Economic History
ISSN 1101-346X
ISRN LUSADG-SAEH-P--02/79--SE+30

Printed by KFS, Lund, Sweden, 2002

Orders of printed single back issues (no. 1-65)
Department of Economic History, Lund University
Postal address: P.O. Box 7083, S-220 07 Lund, Sweden
Telephone: +46 46 2227475
Telefax: +46 46 131585

Full-text electronic issues (no. 60, 61, 66--)
www.ekh.lu.se

Dealing with Economic Stress Through Migration

Lessons from Nineteenth Century Rural Sweden

Martin Dribe

Introduction

For a majority of the population, life in preindustrial society was characterised by vast uncertainties mainly due to fluctuations in harvests or prices of basic commodities, but also following the death of vital household members. These uncertainties often resulted in a close relationship between economic fluctuations and demographic outcomes (e.g. Galloway 1988; Lee 1990). Crop failures led to increased mortality due to malnutrition and increased susceptibility to disease, and lower fertility as a result of subfecundity following acute malnutrition, separation of spouses as a result of migration, or, perhaps, deliberate postponement of births. We can expect that people living under these uncertain conditions undertook various measures to protect themselves from the dramatic consequences of economic fluctuations. One of the potentially most important such measure is migration. By moving to another location, whole families, or individuals within families, could escape hunger and disease, and, in some cases, also provide assistance to family and relatives behind (e.g. Stark 1991). In the literature on the

This paper has been written within the research project *Early Life Conditions Social Mobility and Health in Later Life*, financed by the U. S. National Institutes of Health/National Institute of Aging (1P01AG18314-02), the Swedish Council for Social Research and the Bank of Sweden Tercentenary Foundation. Financial support from Jan Wallander and Tom Hedelius Foundation, Svenska Handelsbanken is gratefully acknowledged. A previous version of this paper was presented in the panel "Why Leaving? Multivariate Approaches of Out-migration in Asia and Europe", at the annual meeting of the Social Science History Association, Pittsburgh, PA, October 26-29, 2000. I am grateful to participants in this panel as well as to members of the Eurasia project, especially Tommy Bengtsson, Christer Lundh and Michel Oris, for comments and suggestions.
Department of Economic History, Lund University. Martin.Dribe@ekh.lu.se.

determinants of migration various push factors, indicating conditions driving migrants away from their places of origin, often play a prominent role in explaining why and when people move (e.g. Massey et al. 1993). A prime example is the millions of Irish who left for America after the famine in the 1840s, which led not only to improved conditions for those who left, but also for those who stayed behind (Ó Gráda and O'Rourke 1997). Similarly, the upsurge in emigration from Sweden to the United States in the 1860s were to a considerable extent driven by economic crises following crop failures in several parts of the country (Carlsson 1976, pp. 120-123).

The purpose of this paper is to study to what extent migration was used as a measure to deal with economic and demographic stress on the family in a local community in southern Sweden during the period around 1830-1865. This was a period of agricultural transformation and commercialisation, but also a period during which people suffered from economic fluctuations as shown by clear responses in both mortality and fertility from increased prices (Bengtsson and Dribe forthcoming). The analysis is done at the micro level, using a longitudinal data set, measuring the impact of fluctuations in grain prices on migration of children leaving home, and whole families, controlling for crucial variables such as social status and family composition.

Migration as a response to economic and demographic stress

In this study short-term economic stress refers to adverse economic conditions for the family, stemming from harvest failures or price changes on vital commodities, most notably food.[1] Which economic conditions that have an adverse impact on the family is to a large extent dependent on the social status of the family as well as on the nature of the economy. While landless labourers were adversely affected by high food prices, landed peasants producing for the market in an open economy, where prices were exogenously given, benefited from high grain prices as long as their output did not change. On the other hand, in a closed economy, where prices are endogenously determined by local harvest conditions, high grain prices will most likely indicate bad harvests, which in turn implies that the normal peasant do not have much output left to supply to the market after basic needs of the family

[1] This study emanates from the comparative *Eurasia Project on Population and Family History* (EAP), which focuses on the way individuals and households dealt with economic and demographic stress for preindustrial populations in Sweden, Belgium, Italy, China and Japan. For a description of the basic ideas and analyses of mortality, see Bengtsson, Campbell and Lee (forthcoming).

have been met. Of course, this means that he cannot benefit from high market prices, but may instead suffer considerably. As has been shown elsewhere, the economy of the area and period under study can be characterised as open, with a rather commercialised agriculture and a well-integrated grain market, where grain prices were mainly determined by forces other than local harvest conditions (Dribe 2000, ch. 7). It can therefore be expected that landless labourers were negatively affected by increasing grain prices, while market producing peasants generally suffered more from low prices. The landholding peasants in the area can be divided into three different categories: freeholders, who owned their land and paid taxes to the crown; crown tenants, who farmed crown land and paid rents to the crown, often in kind or in money; and noble tenants, who farmed land owned by estates and paid rents to a noble estate owner, often in labour. Most likely, this made freeholders and crown tenants more dependent on the market than noble tenants, even though all groups participated to some extent on the market (Dribe 2000, pp. 44-49).

Demographic stress refers to the effects of the death of vital household members, such as the head of household or his spouse. When experiencing economic or demographic stress, households and families probably tried to undertake different actions in order to minimize the impact. Naturally, the measures available are likely to have differed between different groups in society. Therefore, one important question is how different individual and household characteristics, such as land-ownership, social status, position in the household, etc., influenced the demographic response to economic and demographic stress. Some households that, for instance, farmed their own land and employed servants or labourers, were probably in a better position to avoid the most serious effects of economic stress, while those totally lacking resources had much smaller opportunities to undertake such measures, which made them highly vulnerable to stress.

Similarly, landed peasants had better opportunities than landless labourers to use previously accumulated capital, or borrow money with the farm as a security, in order to relieve stress, although the capital markets of the time were by no means perfect and storing of grain entailed considerable losses. Since the landless to a large extent lacked these options, they were highly dependent on aid from society of from other individuals. However, at least in Sweden, the poor relief system of the time was not designed to provide for large parts of the population in times of crises, but rather to help the poorest few percent of the population in more normal times (see e.g. Bengtsson and Dribe, forthcoming). Taken together, this implies that although there might

have been different measures available to deal with economic hardship, few of these were available for the landless labourers.

In previous studies of preindustrial rural societies, clear mortality responses to short-term economic fluctuations have been detected both at aggregate level (e.g. Galloway 1988) and micro level (Alter and Oris 2000; Bengtsson 2000; Campbell and Lee 2000; Tsuya and Kurosu 2000; Breschi, Derosas and Manfredini 2000). Similarly, clear connections between fertility and economic fluctuations have been found at the aggregate level for Sweden as well as for other European countries (Bengtsson 1993a; Galloway 1988; Lee 1981), and also appears to be present at micro level in a variety of social and economic contexts (Alter and Oris 1999; Bengtsson and Dribe forthcoming; Breschi et al. 2000; Wang, Campbell and Lee 1999).

Thus, there are clear indications that individuals, as well as households, were profoundly affected by economic stress and also tried to undertake different actions in order to minimize the adverse impact. Migration of different household members, or of entire families, are two strategies of potentially great importance. After the Great Irish Famine in the late 1840s, for example, emigration rates increased rapidly, and even if migration was not a perfect famine relief, the opportunity of emigration seems to have lowered mortality for those who stayed behind (Ó Gráda and O'Rourke 1997). Nineteenth century rural Scotland also seems to show a similar migration response to economic distress (Anderson 2000), and in some of today's developing countries, famines often lead people to migrate in search of food or work, even if this movement most often is temporary and internal, rather than permanent and external as in the Irish case (e.g. Sen 1981). However, Groote and Tassenaar (2000), studying this issue for a rural Dutch province 1800-1860, did not find any evidence indicating that hunger drove people to migrate, but they are only able to measure the migration response as an average over a preceding five year period, and do not distinguish the effects of price fluctuations on different social groups, which may conceal a migration response in the poorer segments of the population. In a study of the province of Scania in Sweden, using aggregated data for the period 1820-1859, Bengtsson (1990) found that the extent to which migration responded to economic stress depended on both area and period.

In times of economic stress, when it became harder to satisfy the consumer demand of the household, children could also have been forced to leave the household earlier in order to find employment outside the household. It has also been suggested that migration can be used as a deliberate family strategy to diversify income by having

family members work in different sectors of the economy (Cain 1981; Stark 1991). However, this is a more long-term strategy to minimize the impact of economic stress rather than a short-term response, once the bad times hit the household. Economic stress could also force whole families to leave in order to take up employment in another area. This could, of course, be difficult if long-range migration is costly or the conditions are similar in other areas. In the area of concern here, the migration pattern was totally dominated by local movement – over 80 per cent of the migrating families moved within a 15 kilometre radius (Dribe forthcoming) - which might lead us to suspect that family migration might not have been an effective response to economic stress.[2]

Taken together, we might expect migration to have been one option available to individuals and families in times of economic stress. However, the viability and effectiveness of this option depended to a large extent on opportunities in other areas of finding employment or new land, and the situation for the household concerning demand for labour etc. The households that were worst hit by a crop failure were often small, with few opportunities of sending children or servants away in times of crises. In some cases migration is also quite costly, implying that those most in need might have the least possibilities of moving (cf. Hatton and Williamson 1994; Ó Gráda and O'Rourke 1997). Hence, even if we expect migration to be a viable option in practice, it might not be available in any effective way for those most in need.

Demographic stress on the family (here defined as the death of the family head or his spouse) can be expected to influence the migration behaviour of both children and families. The death of the father, for example, might have increased the likelihood of leaving home for the siblings who were not to take over the family farm, while the selected heir might have remained on the farm. However, if the mother continued to run the farm as head of household, we could probably expect leaving home to have been delayed, since there would have been an increased demand for labour to compensate for the labour of the father. It was not uncommon for widows to assume headship after the death of the husband and continue to run the farm with hired labour or own children as the primary labour force (Hedberg 1985; Winberg 1981; Zernell-Durhàn 1990). However, it seems as if this was normally considered as a transitory state so that the widow either remarried and transferred headship to her new husband or, if she stayed unmarried, to one of her sons or son-in-laws (Gaunt 1996, p. 176; Perlestam 1998, pp. 167-175), although widows also could remain as household heads for longer

[2] The same total predominance of short-range migration is evident for servants and children leaving home (Dribe 2000, p. 112; Dribe and Lundh 2002a).

periods of time (see Dribe and Lundh 2002b). The frequency of remarriage also appears to have been quite high in preindustrial Sweden, which indicates that this was an often preferred solution for a widow or a widower following the death of the spouse (Lundh 2002).

The death of the mother may also have had effects on leaving home. If the father remarried, children might have left home sooner due to conflicts with the new stepmother, or due to other factors relating to the new member of the household (e.g. Kussmaul 1981, p. 74). The balance between consumers and workers might also have changed following such an event, as the new wife might have brought children of her own into the household. The effect of these variables can be difficult to distinguish, since they depend on what happens in the household following the change. If the father did not remarry, for example, we would expect that especially daughters were given incentives to stay at home longer in order to take care of the household. Furthermore, the impact of demographic stress on leaving home can also be expected to depend on the social status of the family. For the landless, the death of the father might well imply the total dissolution of the household, leading children to leave very early while, in wealthier peasant families, the effect might be the opposite by increasing the demand for labour in the household.

It also seems likely that this kind of demographic stress could have effects on the migration propensity of the entire family. The death of the household head for example could in some cases imply the dissolution of the entire household forcing the family to relocate. In other cases such an event could instead imply that the widow assumes headship and continue to farm the land, and after a while perhaps remarries (see above). Under such circumstances there would not be any effect on migration of the death of the household head.

When analysing the strategic actions of families, or individuals within families, it is also important to take the family composition into account. The number of children in the family might for example affect both the migration propensity in general, and the migration response to economic or demographic stress. Families without children living in the household can be expected to have responded differently from families with several children present. Similarly, the presence of siblings can be expected to have been an important variable behind differences in the leaving home response of children both in times of economic and demographic stress. The death of one of the parents, for example, can be assumed to have affected older children with more siblings quite differently from younger children without any siblings in the household.

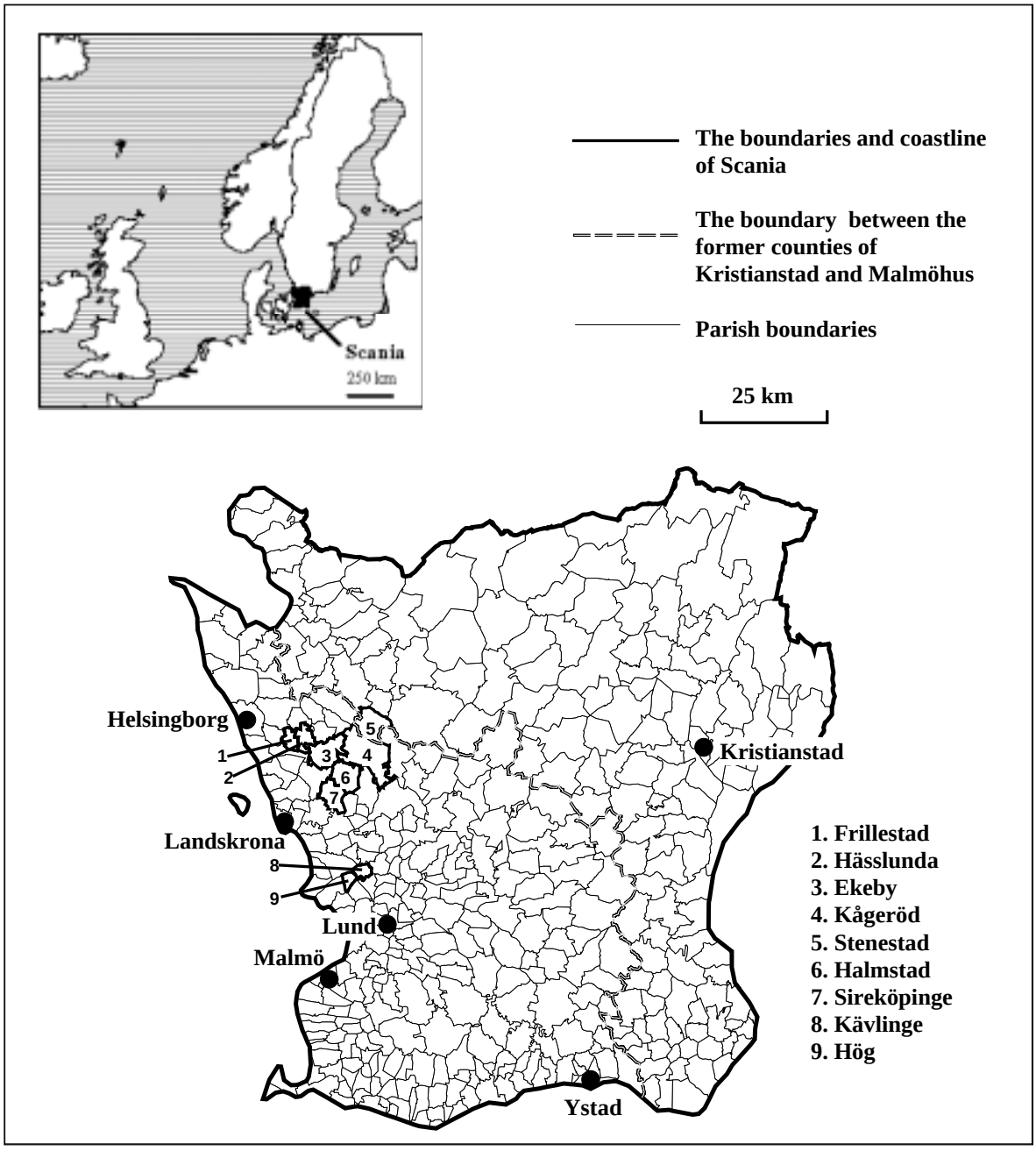
Area, data and statistical model

The multivariate analysis employs a longitudinal dataset containing information on individual, family/household and community level. The analysis is focused on a sample of parishes in western Scania included in the Scanian demographic database (see e.g. Bengtsson and Dribe 1997; Dribe 2000, ch. 2). Nine parishes and one town are included in the database, and in this paper the analysis will be focused on four of these parishes: Hög, Kävlinge, Halmstad and Sireköpinge (see map in figure 1). The social structure of the parishes varied somewhat. Hög and Kävlinge were dominated by freeholders and tenants on crown land, a group rather similar to the freeholders regarding its social characteristics, while Halmstad and Sireköpinge were totally dominated by tenants on noble land. In addition to the peasant group the parishes also hosted various landless and semi-landless groups, dependent on working for others to cover the subsistence needs of the family. In 1830 the four parishes had 2,333 inhabitants, which increased to 3,383 by 1865; an annual increase of 1.1 percent during this 35-year period. This is a somewhat faster rate of growth than for Sweden as a whole (0.9 percent per year, see Bengtsson and Dribe 1997).

The dataset is based on a family reconstituted population of these four parishes (see also Reuterswärd and Olsson 1993; Bengtsson and Lundh 1991). To these reconstituted families information from poll-tax registers (*mantalslängder*) has been added on, for instance, size and type of the landholding. Information from catechetical examination registers, has also been linked to the database giving information on household composition and individual-level migration (see Dribe 2000, ch. 2). The resulting dataset is longitudinal at the micro level and follows individuals from birth or in-migration to death or out-migration. Family migration has been defined as a movement of husband and wife often together with children still residing at home. Thus, also the cases where the mother and father moved away together with some of their children but where other children left home at the same time have been considered as family migration. In the analysis we follow families from their establishment at marriage, or in-migration to the dissolution or out-migration of the family. In the analysis of children leaving home, children are followed from birth or in-migration to the point when they left the parental home. Since the focus is on the response to economic and demographic stress all exits from home are included instead of limiting the analysis to first-time leavers.

The migration pattern in this local community seems to accord pretty well with many other preindustrial areas. In general mobility was

Figure 1. Map of the area under study.



Map by Henrik Svensson.

and Lundh 2002a; cf. Martinius 1967; Moch 1992; Tilly 1978). After leaving home in the mid- to upper teens people typically moved frequently before settling down and getting married in their late twenties (Dribe and Lundh 2002a). After marriage, people got less mobile, which does not imply that family migration was negligible (see Dribe

forthcoming). This migration pattern fits quite well into the institution of life-cycle service. For a number of reasons, children in all social groups left home before marriage to serve in another household. Children to landless labourers left home earlier than peasant children and also spent a longer time in service, but in general children from all social groups (except the nobility) participated in this system (Dribe 2000, ch. 6). The system provided a solution to the problems of a family economy dominated by nuclear family households. In times when the demand for labour exceeded the family supply, servants were hired as supplementary labour. Conversely, in times of excess supply of labour, there was always an opportunity to send children away from home to work for another master. In addition, there were also other reasons for leaving the parental home before marriage, having to do with finding a marriage partner, learning the skills of running a farm, or simply try to improve ones economic situation (see e.g. Berkner 1972; Kussmaul 1981; Laslett 1977; Mitterauer 1992).

In the analysis combined time-series and event history analysis is used, which allows us to estimate the effects of various covariates at individual and family level as well as of aggregate fluctuations at the community level on the likelihood of migration (see Bengtsson 1993b). We use the Cox proportional hazards model, which does not require any specification of the underlying hazard function (Cox 1972; see also Collett 1994). The model can be written as:

$$h_i(a) = h_0(a)\exp[\beta_1 X_1+\beta_2 X_2+\ldots+\gamma Z(t)]$$

$h_i(a)$ is the hazard of the event for the ith individual at age a
$h_0(a)$ is the ”baseline hazard”, i.e. the hazard function for an individual having the value zero on all covariates.
βs are the parameters for the individual covariates (X_1, X_2, **…**), that are estimated.
γ is the parameter for the external covariate (Z(t)

In discussing the results below relative hazards are used as a measure of the difference between groups with different values on the covariates. The relative hazards indicate the difference in the hazard of the event for the group under consideration relative to the reference category. A value of 1.50 implies that the hazard, or risk, of migration in the group is 50 percent higher than in the reference category, while a figure of 0.50 implies that the hazard is 50 percent (or half) of the hazard in the reference category.

Separate models are estimated for children leaving home and family migration and also for different age groups and in the case of children for males and females separately. The covariates included in the different models are very similar.

Social status of the family is sub-divided into four different categories: freeholders/crown tenants, noble tenants, semi-landless (crofters and smallholders) and landless. In the construction of this covariate information from poll-tax registers on the size of the landholding has also been taken into account. Only peasants with land at or above subsistence level have been regarded as belonging to the peasant group while the rest have been considered as smallholders, belonging to the semi-landless group (see Dribe 2000, pp. 26-27).

Economic stress is indicated by short-term fluctuations in grain prices measured as deviations from a medium-term trend (Hodrick-Prescott) of price indexes, including information for the three main crops: rye, barley and oats (see Dribe 2000, ch. 7 and appendix). The price index is included in the model as an external, or community-level, covariate common to all individuals in the dataset at each point in calendar time.

Demographic stress is indicated by the life status of the head couple. For family migration we use the death of the husband and wife while distinguishing deaths occurring within the last three years from those occurring earlier. Due to the relatively low number of children loosing their parents it was impossible to use such an elaborate distinction for children leaving home. Instead, the presence of mother and father is included in this case as an indication of demographic stress.

Household context is indicated by the number of children residing in the same household in the case of family migration, and by the presence of older and younger siblings in the case of children leaving home.

Parish of residence controls for potential effects of living in different parishes; differences that are not accounted for by the other variables in the model.

Birth year of the family head (family migration) or the individual child (children leaving home) measures an average cohort effect, i.e. the effect on the likelihood of migration of being born one year later.

Empirical results

Family migration

Table 1 shows the estimation results for family migration for heads aged 20-65. It includes three separate models taking interactions between

economic stress (grain price fluctuations) and social status and presence of children into account. Table 2 reports the results for similar models estimated for older (40-65) and younger families (20-40) separately. Due to small numbers it was not possible to estimate the full model including the demographic stress covariates for the two age groups separately. Instead the purpose of these models is to provide some detail to the interaction between social group/presence of children and economic stress, while for the effect of demographic stress we have to be content with analysing the entire age span.

Starting with social-group specific differences, landed peasants and crofters were less mobile than landless labourers, most likely due to their higher investment in the land and greater binding to the place of residence, which is also commonly found in other studies (e.g. Groote and Tassenaar 2000; Moch 1992, p. 38). In the more recent literature on international migration, increasing attention has also been devoted to this kind of 'investment in immobility' as an important reason why not more people move in response to differences in standard of living between regions (e.g. Fischer, Martin and Straubhaar 1997). Comparing the results for younger and older families in table 2, it is also clear that the social-group-specific differences are more pronounced in the early phase of the family life cycle than in later phases. This is also what could be expected, since families in the first part of the life cycle probably were more likely to change employment, trying to better their situation, while those who had remained landless for a long time were less likely to advance socially. Thus, also in the landless group were families with older heads more likely to be stable than at younger ages.

There is a positive effect on year of birth of the family head on internal migration. Table 2 also reveals that it was in particular younger families who became more likely to leave the parish over time. There is a quite strong positive effect of having more children residing in the household and this is even more pronounced for younger families than for older. It may be an indication that these families had entered into the phase of the family life cycle when there were opportunities, and also a need, to change the residential arrangements, acquire a larger piece of landholding, etc. On the other hand, it may also be an indication of increased consumption pressure on these families with a relatively large number of young dependants, which forced them to break up and find better employment, housing, etc. Which of these reasons that were the most important is impossible to identify. We can only assert that these families were more mobile, and, as expected, a larger number of children did not pose any increased difficulties migrating, since most migration was over very short distances.

Turning to the effects of demographic stress the only statistically significant result is that families in which the husband died more than three years ago show a lower risk of migration. This must be interpreted as indicating the rather high degree of stability of families where the widow decided to continue running the household without remarrying. There are no significant effects of death within three years of either husband or wife. Judging just from the size of the coefficients there might be a positive effect on migration of father's death, while the effect of mother's death appears to be the opposite. However, since these coefficients are not statistically significant we should not read to much interpretation into these results.

In the full model (table 1) there is a positive effect of grain prices on the likelihood of migration. The age-specific results in table 2 show that this effect is limited to the older families. Furthermore, the interaction effects show that noble tenants and semi-landless were more likely to move in times of high prices, while no corresponding effect is discernable for freeholders/crown tenants, and is not statistically significant for landless. Since high grain prices implies relatively favourable times for market producing peasants, as discussed above, this could be an indication that these families tried to acquire a farm of their own in times when prices were high, and when the prospects for freeholders producing for the market looked rather good. This is also supported by the fact that the effect is limited to the older families, who can be assumed to have had better opportunities to accumulate the wealth necessary to buy a farm. However, in order to substantiate this hypothesis more rigorously a deeper investigation of land transmissions in the area is needed in order to see if this kind of social mobility really took place.

In any case these results clearly show that relocating the entire family in times of economic stress was not a viable option, or at least not the chosen strategy, for the families most in need, i.e. the landless. Undertaking long-range migration, which actually could have been an effective option when times got bad in the area of residence, was quite costly both monetarily and in terms of information and emotional suffering from breaking up from friends or relatives. On the other hand, moving over a short distance entailed lower costs of migration, but did not improve the situation very much for the families most in need, since the economic conditions can be expected to have been similar.

The interaction effects between economic stress and the number of children in the household show quite different results for older and younger families. In the lower age group it seems as if families with

Table 1. Cox proportional hazards estimates (relative hazards) of family migration 1829-1867. Head 20-65 years. Full model.

	Average	I	II	III
Social status (Freeh./Crown ten.)	0.16	1.00	1.00	1.00
Noble tenants	0.15	0.70	0.65	0.70
Semi-landless	0.17	0.82	0.80	0.82
Landless	0.52	2.09***	2.09***	2.08***
Parish (Hög)	0.18	1.00	1.00	1.00
Kävlinge	0.21	0.70**	0.70**	0.70**
Halmstad	0.28	0.88	0.88	0.88
Sireköpinge	0.33	1.22	1.22	1.23
Number of children in the hh (0)	0.19	1.00	1.00	1.00
1	0.19	2.62***	2.62***	2.57***
2	0.18	2.64***	2.64***	2.65***
3	0.16	3.11***	3.11***	3.09***
4+	0.28	3.46***	3.47***	3.46***
Husband's life status (Alive)	0.86	1.00	1.00	1.00
Dead<3 years	0.01	1.54	1.52	1.54
Dead>3 years	0.13	0.71*	0.71*	0.71*
Wife's life status (Alive)	0.88	1.00	1.00	1.00
Dead<3 years	0.02	0.44	0.45	0.44
Dead>3 years	0.10	0.82	0.82	0.82
Birth year	1809	1.02***	1.02***	1.02***
Grain price	-0.02	1.09**	1.04	1.09
Social status*Grain price				
Noble tenants		---	1.36	---
Semi-landless		---	1.19	---
Landless		---	1.01	---
Children*Grain price				
1		---	---	1.15
2		---	---	0.93
3		---	---	1.07
4+		---	---	0.91
Events		519	519	519
Total time (person years)		15811	15811	15811
Max. log. likelihood		-3062.4	-3060.0	-3059.6
Overall p-value (χ^2):		0.000	0.000	0.000
Parameters		16	19	20

* p<0.10, **p<0.05, ***p<0.01.

Table 2. Cox proportional hazards estimates (relative hazards) of family migration 1829-1867. Reduced model by age of household head.

		Head 20-40 years				Head 40-60 years		
	Average	I	II	III	Average	I	II	III
Social status (Freeh./Crown ten.)	0.14	1.00	1.00	1.00	0.18	1.00	1.00	1.00
Noble tenants	0.15	0.56	0.57	0.56	0.15	1.00	0.88	0.98
Semi-landless	0.16	0.83	0.84	0.82	0.19	0.83	0.83	0.82
Landless	0.55	2.41***	2.48***	2.39***	0.49	1.65	1.74	1.64
Parish (Hög)	0.17	1.00	1.00	1.00	0.18	1.00	1.00	1.00
Kävlinge	0.21	0.63**	0.63**	0.63**	0.21	1.14	1.13	1.13
Halmstad	0.28	0.78	0.78	0.78	0.29	1.44	1.43	1.44
Sireköpinge	0.34	1.00	1.00	1.00	0.32	1.78**	1.77**	1.78**
Number of children in the hh (0)	0.19	1.00	1.00	1.00	0.18	1.00	1.01	1.00
1	0.22	3.03***	3.03***	3.00***	0.17	1.94**	1.94**	2.26**
2	0.20	3.33***	3.33***	3.41***	0.15	1.45	1.46	1.69
3	0.16	3.64***	3.64***	3.70***	0.16	2.11**	2.11**	2.44***
4+	0.23	4.70***	4.71***	4.80***	0.34	1.78**	1.79**	2.10**
Birth year	1816	1.02***	1.02***	1.02***	1801	1.01	1.01	1.01
Grain price	-0.02	1.06	1.24	0.86	-0.02	1.15*	0.75	1.71**
Social status*Grain price								
Noble tenants		---	0.94	---		---	2.44**	---
Semi-landless		---	0.93	---		---	1.84*	---
Landless		---	0.83	---		---	1.44	---

	Head 20-40 years			Head 40-60 years		
Children*Grain price						
1	---	---	1.48**	---	---	0.71
2	---	---	1.14	---	---	0.70
3	---	---	1.33	---	---	0.72
4+	---	---	1.19	---	---	0.55**
Events	361	361	361	158	158	158
Total time (person years)	7229	7229	7229	8582	8582	8582
Max. log. likelihood	-2112.8	-2112.0	-2109.5	-943.8	-939.9	-940.6
Overall p-value (χ^2):	0.000	0.000	0.000	0.000	0.000	0.000
Parameters	12	15	16	12	15	16

* p<0.10, **p<0.05, ***p<0.01.

children respond stronger than families without any children although it is only families with one child that have a statistically significant coefficient. In the older age group there is a positive effect for families without children, while those with more children show a weaker response, although the net response is positive for all groups. Taken together, it seems as if the number of children residing in the household did not affect the response to economic stress in any dramatic way. Instead the major difference in response is found between different age- and social groups.

Children leaving home

Tables 3 and 4 report the estimations for children leaving home.[3] There is a positive effect of birth year for all but younger males, which shows that later birth cohorts left home at an increasingly early age. Furthermore, this rising trend in the likelihood of leaving home was especially clear for older children, who thus became less likely to stay in their parental households over time.

There are also marked differences between the peasants (freeholders/crown tenants and noble tenants) and semi-landless and landless. These differences mainly stem from differences in the demand for labour between these groups (see Dribe 2000, ch. 4). The social group differences are also more pronounced for younger than for older children, and for females than for males.

Children who had previously been away from home were more likely to leave home again. However, the very low proportion in the lower age group who had been away from home before (only 1-2 percent) warrants some caution in interpreting the result for this age group. In the older age group 16-17 percent of children had been away from home before, and the results show that they were more than twice as likely to leave home again. This also seems reasonable, since children leaving home and then returning might do so for shorter periods of time, perhaps as a result of the difficulties in obtaining employment, conflicts with the new master, etc.

Turning to the effect of siblings in the household there does not appear to be a common pattern for all groups. Younger children with only younger siblings, or no siblings at all, residing in the household experienced a higher risk of leaving home, which indicates that all their

[3] This analysis is based on Dribe (2000, ch. 8), which provides a more in-depth analysis of the relationship between leaving home and economic fluctuations and the household economy. The models estimated here are somewhat different, why the results are not totally comparable. On the whole, however, a very similar picture emerges.

older siblings had already left home and that they therefore in some sense stood in turn to leave. Just as expected younger girls with only older siblings in the household had a considerably lower risk of leaving home, since they were not the first to leave and their labour was probably needed in the household.

Model II includes interaction effects between economic stress and social status. Looking first at younger males the base effect for grain price should be interpreted as a positive effect of grain prices in the freeholder/crown tenants group (i.e. the reference category). The negative interaction effects indicate a more negative effect in the other social groups. For noble tenants the price effect clearly is negative (the net effect in this group is 1.46*0.49=0.72), while the price coefficients for the other two groups are closer to one (0.95 and 0.96 respectively). Thus, younger sons to freeholders and crown tenants faced a higher risk of leaving home when grain prices were rather high, i.e. in quite favourable times, while they were more likely to remain at home when prices were low. This could be interpreted as indicating that market-producing peasants held on to their family labour in times of low prices and declining revenues, and perhaps got rid of servants instead, thereby economising on hired labour in times of low revenues. Younger sons to noble tenants on the other hand seem to have been more likely to leave home in times of low prices, which may have been a result of a declining demand for labour at the estates following low prices, forcing younger children to noble tenants to leave home to go into service. In times of high prices demand for labour most likely increased, inducing children to remain at home longer.

Older males show no similar interaction between price fluctuations and social status. Instead there is a positive effect in the base model indicating a more uniform effect in the different social group. This may have been a result of a generally higher mobility in times of high prices, when investments in agricultural activity increased, thereby increasing the demand for labour (Dribe 2000, p. 172; Schön 1997). It may well be that this increasing demand for labour opened new opportunities especially for males, who therefore left home or led servants to leave for a new employer. It has also been shown that older children, especially to noble tenants, were more sensitive to harvest fluctuations (controlling for the price level), which could be interpreted as a response to variations in the demand for labour (Dribe 2000, ch. 8). The interaction effects in model II, table 4, also suggest that the positive price effect is strongest for noble tenants, although the coefficient is not statistically significant. For females we find no response at all to economic

Table 3. Cox proportional hazards estimates (relative hazards) of children leaving home 1829-1867. Children aged 10-17.

	Males					Females				
	Average	I	II	III	IV	Average	I	II	III	IV
Social status (Freeh./Crown ten.)	0.21	1.00	1.00	1.00	1.00	0.17	1.00	1.00	1.00	1.00
Noble tenants	0.17	1.07	1.14	1.07	1.07	0.17	1.81	1.84	1.81	1.86
Semi-landless	0.18	4.64***	5.17***	4.64***	4.61***	0.17	9.17***	9.24***	9.21***	9.57***
Landless	0.44	3.43***	3.82***	3.44***	3.42***	0.48	8.46***	8.53***	8.48***	8.65***
Parish (Hög)	0.18	1.00	1.00	1.00	1.00	0.15	1.00	1.00	1.00	1.00
Kävlinge	0.25	0.94	0.94	0.95	0.95	0.21	1.33*	1.33*	1.33*	1.32*
Halmstad	0.27	1.04	1.05	1.04	1.05	0.29	0.86	0.86	0.86	0.83
Sireköpinge	0.29	0.62***	0.62***	0.62***	0.62***	0.34	0.78	0.78	0.78	0.76
Presence of parents (Both present)	0.82	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00
Father dead	0.12	0.98	0.98	0.97	1.16	0.09	1.55***	1.55***	1.56***	1.03
Mother dead	0.06	0.85	0.85	0.86	0.93	0.06	1.47**	1.47**	1.46**	1.20
Presence of siblings (Older and younger)	0.44	1.00	1.00	1.00	1.00	0.40	1.00	1.00	1.00	1.00
Only older	0.13	0.82	0.82	0.76	0.93	0.13	0.53***	0.53***	0.53**	0.63
Only younger	0.33	1.30**	1.30**	1.30**	1.33**	0.36	1.40***	1.40***	1.40***	1.25
No siblings	0.09	1.73***	1.73***	1.73***	1.90***	0.11	0.89	0.89	0.89	0.87
Previous leaving home (Never)	0.99	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00
One or more times	0.01	1.66**	1.65**	1.67**	1.65**	0.02	1.17	1.17	1.17	1.18
Birth year	1837	1.00	1.00	1.00	1.00	1837	1.01***	1.01***	1.01***	1.01***
Grain price	-0.02	0.97	1.46*	1.04	0.96	-0.02	0.93	0.89	0.90	0.93
Social status*Grain price										
Noble tenants		---	0.49**	---	---		---	1.37	---	---
Semi-landless		---	0.65**	---	---		---	1.04	---	---
Landless		---	0.66**	---	---		---	1.04	---	---

Table 3. Continued.

	Males					Females				
	Average	I	II	III	IV	Average	I	II	III	IV
Siblings*Grain price										
›lder		---	---	1.31	---		---	---	1.35	---
Only younger		---	---	0.86	---		---	---	1.01	---
No siblings		---	---	0.88	---		---	---	1.05	---
Siblings*Parents										
Only older*Father dead		---	---	---	0.65		---	---	---	0.60
Only older*Mother dead		---	---	---	0.47		---	---	---	0.74
Only younger*Father dead		---	---	---	0.92		---	---	---	2.10*
Only younger*Mother dead		---	---	---	1.04		---	---	---	1.41
No siblings*Father dead		---	---	---	0.69		---	---	---	1.32
No siblings*Mother dead		---	---	---	0.77		---	---	---	1.23
Events		407	407	407	407		382	382	382	382
Total time (person years)		6190	6190	6190	6190		6348	6348	6348	6348
Max. log. likelihood		-2602.8	-2599.8	-2599.7	-2601.8		-2453.9	-2453.5	-2452.8	-2450.4
Overall p-value (χ^2):		0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000
Parameters		14	17	17	20		14	17	17	20

* p<0.10, **p<0.05, ***p<0.01.

Table 4. Cox proportional hazards estimates (relative hazards) of children leaving home 1829-1867. Children aged 17-30.

	Males					Females				
	Average	I	II	III	IV	Average	I	II	III	IV
Social status (Freeh./Crown ten.)	0.31	1.00	1.00	1.00	1.00	0.23	1.00	1.00	1.00	1.00
Noble tenants	0.19	1.15	1.13	1.14	1.15	0.16	1.11	1.10	1.11	1.09
Semi-landless	0.15	1.45*	1.45*	1.44*	1.44*	0.18	2.49***	2.50***	2.48***	2.38***
Landless	0.35	1.43**	1.43**	1.43**	1.46**	0.42	2.06***	2.06***	2.05***	2.02***
Parish (Hög)	0.21	1.00	1.00	1.00	1.00	0.20	1.00	1.00	1.00	1.00
Kävlinge	0.30	1.17	1.17	1.17	1.13	0.24	1.16	1.16	1.16	1.15
Halmstad	0.21	1.38*	1.37*	1.39*	1.33	0.28	1.46***	1.46***	1.47***	1.48***
Sireköpinge	0.27	0.84	0.84	0.84	0.82	0.28	1.20	1.19	1.20	1.19
Presence of parents (Both present)	0.75	1.00	1.00	1.00	1.00	0.70	1.00	1.00	1.00	1.00
Father dead	0.19	1.28*	1.28*	1.29*	2.01***	0.17	1.32**	1.31**	1.32**	1.68**
Mother dead	0.06	1.42	1.42	1.43	0.73	0.13	1.00	1.00	1.00	1.92**
Presence of siblings (Older and younger)	0.27	1.00	1.00	1.00	1.00	0.27	1.00	1.00	1.00	1.00
Only older	0.10	0.68*	0.68*	0.67*	0.81	0.12	0.51***	0.51***	0.52***	0.51**
Only younger	0.51	1.09	1.09	1.09	1.24	0.44	1.23*	1.22*	1.24*	1.44***
No siblings	0.12	0.79	0.79	0.79	0.85	0.17	0.84	0.84	0.84	0.92
Previous leaving home (Never)	0.84	1.00	1.00	1.00	1.00	0.83	1.00	1.00	1.00	1.00
One or more times	0.16	2.15***	2.15***	2.16***	2.15***	0.17	2.32***	2.33***	2.32***	2.37***
Birth year	1828	1.02***	1.02***	1.02***	1.03***	1828	1.02***	1.02***	1.02***	1.02***
Grain price	-0.02	1.10*	1.02	1.06	1.10*	-0.02	1.04	1.03	1.08	1.04
Social status*Grain price										
Noble tenants		---	1.22	---	---		---	1.14	---	---
Semi-landless		---	1.05	---	---		---	0.94	---	---
Landless		---	1.08	---	---		---	1.04	---	---

Table 4. Continued.

	Males					Females				
	Average	I	II	III	IV	Average	I	II	III	IV
Siblings*Grain price										
Only older		---	---	1.16	---		---	---	0.91	---
Only younger		---	---	1.06	---		---	---	0.93	---
No siblings		---	---	0.97	---		---	---	1.04	---
Siblings*Parents										
Only older*Father dead		---	---	---	0.51		---	---	---	1.17
Only older*Mother dead		---	---	---	1.59		---	---	---	0.45
Only younger*Father dead		---	---	---	0.47**		---	---	---	0.68
Only younger*Mother dead		---	---	---	2.31		---	---	---	0.36**
No siblings*Father dead		---	---	---	0.65		---	---	---	0.72
No siblings*Mother dead		---	---	---	2.02		---	---	---	0.65
Events		327	327	327	327		505	505	505	505
Total time (person years)		2874	2874	2874	2874		3313	3313	3313	3313
Max. log. likelihood		-1780.2	-1779.6	-1779.7	-1776.3		-2795.7	-2794.8	-2795.0	-2791.0
Overall p-value (χ^2):		0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000
Parameters		14	17	17	20		14	17	17	20

* p<0.10, **p<0.05, ***p<0.01.

fluctuations indicating that economic fluctuations were less important for their leaving home decision.

The absence of a clear response to economic stress (high prices) for landless and semi-landless children in the lower age group may seem surprising at first sight. High prices should have implied lower real wages in this social group, which would increase consumption pressure on these families, and as a result it seems reasonable to expect that their children were forced to leave home. Although there might be such an effect for the older children, no effect is visible for the children under 17. The leaving home process for these landless children was more compressed and structurally determined (Dribe 2000, ch. 6) than for peasant children. A very large majority of the landless children left home around age 16 and since the demand for servants under this age can be expected to have been rather low, there were very limited opportunities to send children away from home when times got worse. Thus, in general, sending children away from home does not seem to have been a viable strategy for these landless families.

We now turn to the analysis of how leaving home responded to demographic stress in the household, which is indicated by the death of one of the parents. Ideally, it would have been relevant to distinguish children whose parent died quite recently from those whose parent died several years earlier as was previously done for family migration. However, since rather few children experienced the death of their parents, it was impossible to subdivide this category further.

For younger boys neither the base effects nor the interaction effects (in model IV) are statistically significant. Thus, is seems as if the leaving home of younger boys was left rather unaffected by the death of the parents. For older boys, on the other hand, there appears to be a clear positive effect on leaving home of the death of the father. Thus, for these children the death of the father had a disruptive effect, making them leave home earlier than would otherwise have been the case. Furthermore, looking at the interaction model in table 4 (model IV), it appears as if this disruptive effect is strongest for boys with both older and younger siblings present in the household, while other boys in this age group have a much less positive effect. Nevertheless, the net effect, also for these children is positive, even though it is much weaker. Taken together, the effect of father's death on older boys was clearly to make them leave home earlier, which provides little or no support for the hypothesis that the death of the father would give sons increased opportunities to remain at home, getting more responsibilities for running the family farm.

Turning to younger daughters, the base effect shows that their risk of leaving home was positively affected by the death of a parent. There is not much of a difference between the death of the mother and of the father. Thus, also in this group the effect of parental death is largely disruptive, making them leave home earlier. The interaction model shows that this positive effect is particularly strong for girls with only younger siblings. Thus, neither in this group is there much evidence supporting the belief that the death of a parent increased the need for children to remain longer in the household.

For older girls the emerging picture is somewhat different (see model IV in table 4). The response in this group is highly dependent on the child's position in the household. Except for daughters with only younger siblings present in the household there appears to be a positive effect on leaving home of parental death, just as for younger daughters and older sons. For older daughters with only younger siblings present, however, the net effect of mother's death is negative (1.92*0.36=0.69), which must be interpreted as these daughters were needed in the household following the death of either of the parents.

Thus, it appears as if the leaving home of all children except younger boys was affected in one way or the other by the death of the parents. For most children the effect of the death of in particular the father was disruptive, leading them to leave home earlier than they otherwise would have done. Older daughters with only younger siblings in the household, however, apparently were needed in the household when one of the parents died, making them remain longer at home following the death of particularly the mother.

Thus, in most of the cases parental death had a disruptive effect, which, at least in some cases, may have been due to the bringing-in of a new step-parent following parental remarriage. However, older daughters with only younger siblings present in the household instead tended to remain longer at home following the death of one of the parents, which most likely reflects the fact that these daughters were needed in the household in order to take care of, and support, their younger siblings after the loss of their mother or father.

Conclusion

This article deals with the question how migration can be used by families and individuals to deal with short-term economic and demographic stress. From previous research we know of several examples where large migration streams have followed economic crises in the place of origin, for example Ireland after the famine or Sweden in

the 1860s (Carlsson 1976; Ó Gráda and O'Rourke 1997). However, a necessary precondition for migration to be a viable option in dealing with economic stress, is that there are places to which potential migrants can go, and that costs of migration to these destinations are not prohibitively high. It is clear that large differences in real wages between regions are not enough to trigger migration, if the potential migrants in the poor area do not possess the necessary resources to be able to leave. It may even be the case that people from these poorer areas start to move when the wages at home increases, and the real wage gap declines, since it is only then that they can afford to leave (cf. Hatton and Williamson 1994).

The results presented here clearly show that in this local community of southern Sweden in the first half of the nineteenth century, migration was not an effective instrument in dealing with economic stress. Despite the highly adverse effects of economic fluctuations for landless people, where both mortality and fertility were affected, migration could not help families relieving stress. The explanation is that moving over a short distance did not improve the situation of landless very much in times of economic stress, because the economic conditions in a nearby parish can be expected to have been very similar. Moreover, undertaking long-range migration, which could have relieved the situation, was not feasible due to prohibitively high migration costs and lack of alternatives during the time period of concern here. The costs of migration were not only direct costs for transportation, etc, but also costs of getting information on potential destinations as well as more psychic costs from emotional suffering from leaving friends and relatives behind.

Moreover, landless children left home as soon as their labour was in demand also in more normal times, implying that there was not much opportunity to leave earlier in times of economic stress. The only possible example of a migration response to economic stress is for younger sons to freeholders and crown tenants, who remained longer at home in times of low prices. This might indicate that the market producing peasants economised on hired labour in times of low prices and declining revenues by holding on to their younger sons. Older sons in all social groups, but especially among noble tenants, seems to have moved in times of high prices, perhaps as a response to increased demand for labour outside the parental home. Finally, the leaving home of female children seems to have been less sensitive to economic fluctuations, which reflects the gender-specific division of labour, where females were mostly used in domestic household production.

Demographic stress, as measured by the death of the family head or spouse of head, affected the likelihood of migration, although the response differed between different groups. For most children the effect of parental death (especially of the father) was disruptive, leading to an earlier exit from the parental home. However, older daughters (17-30 years) with only younger siblings present in the household appears to have been needed after the death of the mother, making them remain longer at home following this event.

Taken together, the results clearly demonstrate that certain preconditions must be fulfilled for migration to be an effective way of dealing with stress. There must be an area, or economic sector, unaffected by the same conditions producing economic stress in the place of origin, to which migrants are welcome, and can afford to go. The lack of a well-developed urban, or industrialised, area nearby together with high costs of long-range migration, implied that these preconditions did not exist in southern Sweden in this period, which made migration totally ineffective in dealing with economic stress. Not until later - in the second half of the nineteenth century - when domestic industrialisation and urbanisation gained speed, and migration costs for long-range migration declined, new opportunities for migration emerged, and only then migration also became a way to better ones economic situation both in the short and the long term.

Refererences

ALTER, G. AND ORIS, M. (1999). Fertility, Fecundity, and Economic Stress in the Belgian Ardennes during the 19th Century. Paper for the annual meeting of the Social Science History Association, Ft. Worth.

ALTER, G. AND ORIS, M. (2000). Mortality and Economic Stress: Individual and Household Responses in a Nineteenth Century Belgian Village. In Bengtsson, T. and Saito, O. (eds), *Population and Economy. From Hunger to Modern Economic Growth*. Oxford: Oxford University Press, pp. 335-370.

ANDERSON, M. (2000). Population Growth and Population Regulation in Nineteenth-century Rural Scotland. In Bengtsson, T. and Saito, O. (eds), *Population and Economy. From Hunger to Modern Economic Growth*. Oxford: Oxford University Press, pp. 111-132.

BENGTSSON, T. (1990). Migration Wages and Urbanization in Sweden in the Nineteenth Century. In Van der Woude, A., De Vries, J. and Hayami, A. (eds), *Urbanization in History. A Process of Dynamic Interaction.* Oxford: Clarendon Press.

BENGTSSON, T. (1993a). A Re-Interpretation of Population Trends and Cycles in England, France and Sweden,1751-1860. *Histoire & Mesure* 8, pp. 93-115.

BENGTSSON, T. (1993b). Combined Time-Series and Life-Event Analysis. The Impact of Economic Fluctuations and Air Temperature on Adult Mortality by Sex and Occupation in a Swedish Mining Parish, 1757-1850. In Reher, D. and Schofield, R. S. (eds), *Old and New Methods in Historical Demography*. Oxford: Oxford University Press, pp. 239-256.

BENGTSSON, T. (2000). Inequality in Death: Effects of the Agrarian Revolution in Southern Sweden, 1765-1865. In Bengtsson, T. and Saito, O. (eds), *Population and Economy. From Hunger to Modern Economic Growth*. Oxford: Oxford University Press, pp. 301-334.

BENGTSSON, T., CAMPBELL, C. AND LEE J. (EDS.) (FORTHCOMING). *Life Under Pressure*. Book Manuscript.

BENGTSSON, T. AND DRIBE, M. (1997). Economy and Demography in Western Scania, Sweden, 1650-1900. *EAP Working Paper* 10, IRCJS, Kyoto, Japan.

BENGTSSON, T. AND DRIBE, M. (FORTHCOMING). New Evidence on the Standard of Living during the 18th and 19th Centuries: Long-term Development of the Demographic Response to Short-term Economic Stress among Landless in Western Scania. In Allen, R. C.,

Bengtsson, T. and Dribe, M. (eds), *New Evidence on the Standard of Living in Europe and Asia.* Book Manuscript.

BENGTSSON, T. AND LUNDH, C. (1991). Evaluation of a Swedish Computer Program for Automatic Family Reconstitution. *Lund Papers in Economic History* 8.

BERKNER, L. K. (1972). The Stem Family and the Developmental Cycle of the Peasant Household: An Eighteenth-Century Austrian Example. *American Historical Review* **77**: 398-418.

BRESCHI, M., DEROSAS, R. AND MANFREDINI, M. (2000). Infant Mortality in Nineteenth-century Italy: Interactions Between Ecology and Society. In Bengtsson, T. and Saito, O. (eds), *Population and Economy. From Hunger to Modern Economic Growth*. Oxford: Oxford University Press, pp. 457-490.

BRESCHI, M. ET AL. (2000). Family, Economy and Reproductive Behavior: Three Case-Studies from Pre-transitional Italy. *Serie Ricerche 2000:5*, Department of Statistics, University of Bologna.

CAIN, M. (1981). Risk and Insurance: Perspectives on Fertility and Agrarian Change in India and Bangladesh. *Population and Development Review* 7, pp. 435-474.

CAMPBELL, C. D. AND LEE, J. Z. (2000). Price Fluctuations, Family Structure, and Mortality in Two Rural Chinese Populations: Household Responses to Economic Stress in Eighteenth- and Nineteenth- Century Liaoning. In Bengtsson, T. and Saito, O. (eds), *Population and Economy. From Hunger to Modern Economic Growth*. Oxford: Oxford University Press, pp. 371-420.

CARLSSON, S. (1976). Chronology and Composition of Swedish Emigration to America. In Runblom, H. and Norman, H. (eds), *From Sweden to America*. Stockholm: Almqvist & Wiksell, pp. 114-148.

COLLETT, D. (1994). *Modelling Survival Data in Medical Research*. London: Chapman and Hall.

COX, D. R. (1972). Regression Models and Life Tables. *Journal of the Royal Statistical Society B* 74, pp. 187-220.

DRIBE, M. (2000). *Leaving Home in a Peasant Society. Economic Fluctuations, Household Dynamics and Youth Migration in Southern Sweden, 1829-1866*. Södertälje: Almqvist & Wiksell International.

DRIBE, M. (FORTHCOMING). Migration of Rural Families in Nineteenth Century Southern Sweden. A Longitudinal Analysis of Local Migration Patterns. *The History of the Family. An International Quarterly*.

DRIBE, M. AND LUNDH, C. (2002a). People on the Move. Determinants of Servant Migration in Ninenteenth Century Sweden. *Lund Papers in Economic History* 80.

DRIBE, M. AND LUNDH, C. (2002b). Gender Aspects of Inheritance Strategies and land Transmission in Rural Scania, Sweden, 1740-1840. In: Ochiai, E. (ed.) *The Logic of Female Succession. Proceedings from the 19th International Symposium of the IRCJS.* Kyoto: IRCJS.

FISCHER, P. A., MARTIN, R. AND STRAUBHAAR, T. (1997). Should I Stay or Should I Go? In Hammar, T. et al. (eds), *International Migration, Immobility and Development. Multidisciplinary Perspectives.* Oxford: Berg, pp. 49-90.

GALLOWAY, P. R. (1988). Basic Patterns in Annual Variations in Fertility, Nuptiality, Mortality and Prices in Preindustrial Europe. *Population Studies* 42, pp. 275-303.

GAUNT, D. (1996). *Familjeliv i Norden*. Södertälje: Gidlunds.

GROOTE, P. AND TASSENAAR, V. (2000). Hunger and Migration in a Rural-Traditional Area in the Nineteenth Century. *Journal of Population Economics* 13, pp. 465-483.

HATTON, T. J. AND WILLIAMSON, J. G. (1994). Latecomers to Mass Emigration: The Latin Experience. In Hatton, T. J. and Williamson, J. G. (eds), *Migration and the International Labor Market 1850-1939*. London: Routledge, pp. 55-71.

HEDBERG, K. (1985). *Land, Family and Inheritance Practices in a Seventeenth Century Swedish Community*. Ann Arbor, PhD Dissertation, University of Michigan.

KUSSMAUL, A. (1981). *Servants in Husbandry in Early Modern England*. Cambridge: Cambridge University Press.

LASLETT, P. (1977). *Family Life and Illicit Love in Earlier Generations*. Cambridge: Cambridge University Press.

LEE, R. D. (1981). Short-term Variation: Vital Rates, Prices and Weather. In Wrigley, E. A. and Schofield, R. S., *The Population History of England, 1541-1871. A Reconstruction*. London: Edward Arnold, pp.356-401 .

LEE, R. D. (1990). The Demographic Response to Economic Crisis in Historical and Contemporary Populations. *Population Bulletin of the United Nations* 29-1990: 1-15.

LUNDH, C. (2002). Remarriages in Sweden in the Eighteenth and Nineteenth Centuries. *The History of the Family. An International Quarterly* 7, pp. 423-450.

MARTINIUS, S. (1967). *Befolkningsrörlighet under industrialismens inledningsskede*. Göteborg: Meddelanden från Ekonomisk-historiska institutionen, No. 8.

MASSEY, D. S. ET AL. (1993). Theories of International Migration: A Review and Appraisal. *Population and Development Review* 19, pp. 431-466.

MITTERAUER, M. (1992). Peasant and Non-Peasant Family Forms in Relation to the Physical Environment and the Local Economy. *Journal of Family History* 17: 139-159.

MOCH, L. P. (1992). *Moving Europeans. Migration in Western Europe since 1650*. Bloomington: Indiana University Press.

Ó GRÁDA, C. AND O'ROURKE, K. H. (1997). Migration as a Disaster Relief: Lessons from the Great Irish Famine. *European Review of Economic History* 1, pp. 3-26.

PERLESTAM, M. (1998). *Den rotfaste bonden - myt eller verklighet? Bru-karansvar i Ramkvilla socken 1620-1820*. Malmö.

REUTERSWÄRD, E. AND OLSSON, F. (1993). Skånes demografiska databas 1646-1894. En källbeskrivning. *Lund Papers in Economic History* 33.

SCHÖN, L. (1997). Internal and External Factors in Swedish Industrialization. *Scandinavian Economic History Review* 45, pp. 209-223.

SEN, A. (1981). *Poverty and Famines. An Essay on Entitlement and Deprivation*. Oxford: Clarendon Press.

STARK, O. (1991). *Migration of Labor.* Oxford: Basil Blackwell.

TILLY, C.(1978). Migration in Modern European History. In McNeill, W. H. and Adams, R. S. (eds), *Human Migration. Patterns and Policies*. Bloomington: Indiana University Press, pp. 48-72.

TSUYA, N. O. AND KUROSU, S. (2000). Mortality Responses to Short-term Economic Stress and Household Context in Early Modern Japan: Evidence from Two North-eastern Villages. In Bengtsson, T. and Saito, O. (eds), *Population and Economy. From Hunger to Modern Economic Growth*. Oxford: Oxford University Press, pp. 421-456.

WANG FENG, CAMPBELL, C. AND LEE, J. (1999). Fertility, Household Context, and Economic Fluctuations in 18th and 19th Century Rural China. Paper for the annual meeting of the Social Science History Association, Ft. Worth.

WINBERG, C. (1981). Familj och jord i tre västgötasocknar. Generationsskiften bland självägande bönder ca 1810-1870. *Historisk tidskrift* 119, pp. 683-708.
ZERNELL-DURHÀN, E. (1990). *Arvet och hemmanet. Generationsstrategier i det norrländska bondesamhället 1750-1895*. Unpublished Licentiate thesis, Umeå University.

Lund Papers in Economic History

1999

66. Tommy Bengtsson & Christer Lundh, Child and Infant Mortality in the Nordic Countries Prior to 1900. */Population Economics/*
67. Mats Olsson, Vikingatida träldom. Om slaveriets plats i Skandinaviens ekonomiska historia. */General Issues/*
68. Jonas Ljungberg, A Revision of the Swedish Producer Price Index, 1968-1993. */General Issues/*

2000

69. Jani Saarinen, Innovation Activity in Finnish Industries - A New Pattern. */General Issues/*

2001

70. Joakim Appelquist, Ett institutionellt perspektiv på den svenska modellen. Effektivitet och institutionell förändring på den svenska arbetsmarknaden från Saltsjöbadsavtalet till Åmanlagarna. */General Issues/*
71. Göran Ahlström, "The Edison of Sweden". C.E. Johansson and the 'Standards of Standard'. */General Issues/*

2002

72. Lars Pettersson & Daniel Sjölin, Socialt kapital, nyföretagande och ekonomisk tillväxt. En jämförelse mellan några kommuner i Öresundsregionen. */Education and the Labour Market/*
73. Anders Nilsson, Yrkesutbildning och kommunal utveckling. Om yrkesutbildningens betydelse i kommunala strategier för ekonomisk tillväxt. */Education and the Labour Market/*
74. Paulina Morel-Astorga, Patterns of Entrepreneurship. Development of Chilean Wine Industry 1850-2000. */Development Economics/*
75. Grethe Banggaard, Fattigforsorgen på landet 1763-1894: Fem sogne i Skåne. */Population Economics/*
76. Grethe Banggaard, Sygdom og Sundhed: Offentlige indgreb og deres virkninger i Sydsverige, ca. 1750-1894. */Population Economics/*
77. Martin Dribe & Paul Nystedt, Information, Trust and Diffusion of Smallpox Vaccination: The Case of Scania, Sweden 1802-1835. */Population Economics/*
78. Tommy Bengtsson & Martin Dribe, Fertility Response to Short-term Economic Stress: Deliberate Control or Reduced Fecundability? */Population Economics/*
79. Martin Dribe, Dealing with Economic Stress Through Migration: Lessons from Nineteenth Century Rural Sweden. */Population Economics/*

Lund Papers in Economic History are published by the Department of Economic History, Lund University, Sweden. This series replaces the former series under the title *Meddelande från ekonomisk-historiska institutionen, Lunds universitet*. The change of name reflects the orientation of the series towards an international readership. The series is multilingual, but the majority of the working papers appear in English.

Lund Papers in Economic History include papers in the following topic areas:

General Issues
Development Economics
Education and the Labour Market
Population Economics

Lund Papers in Economic History are published as occasion arises, not at fixed intervals. Printed issues are distributed to libraries. From 1999 and onwards, full-text electronic issues are also available on *www.ekh.lu.se.* Those who would be interested in receiving information by email on new issues of **Lund Papers in Economic History** are requested to send an email message to *Lund.Papers@ekh.lu.se.*

LUND
UNIVERSITY