Chapter 1
From plan to market: why output collapse?*

1.1 Introduction

Since the start of the transition of the formerly centrally-planned economies into market economies important progress has been made, but its economic and social costs have been much higher than anticipated.\(^3\) Probably the most important, or at any rate the most discussed component of these costs has been the transitional output collapse. Rosati (1994, p 419) puts it this way: ‘Most observers tend to agree that while the shift from central planning to a market system was bound to lead to economic recession, hardly anyone anticipated the recession would be so long and massive’. Focusing on the first part of this statement, however, from a purely standard theoretical perspective, it may be even asked why output ‘was bound to’ decline at all. Central planning yielded an allocation far inside the production possibility frontier, so it should have been possible for transition to induce a move towards that frontier with reallocations that made everybody better off.

Stripped to its bones, the question thus really is: why did output collapse? This paper will review the most important explanations that have been offered for the transitional output collapse in Central and Eastern Europe (CEE) and the Former Soviet Union (FSU).\(^4\) Apart from the theoretical interest, the policy interest would be clearly served by a correct identification of its sources, since this is indispensable for preparing and designing appropriate policies aimed at sustainable growth. As a background, section 1.2 will give some stylized facts concerning the behavior of output since the start of the transition. Some would prefer to characterize these much more as ‘stylized’ than as ‘facts’, because data problems for transition

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* Previously published in Dutch as Moers (1999a).

\(^3\) See for example Ellman (1997) for an overview.

\(^4\) CEE is exclusive of Former East Germany here. Also note that China is not referred to. Comparisons with these countries can be instructive, but they are two very special cases (Former East Germany mainly because of its reunion with Former West Germany, and China mainly because of its maintenance of socialist state control).
countries are relatively large. Therefore, section 1.3 will discuss to what extent this indeed justifies viewing the output collapse as a statistical artifact, with an illustrative reference to the case of Russia. Apart from this statistical ‘explanation’, the debate in the literature has centered on the domination of the output collapse by either demand or supply factors. The former will be investigated in section 1.4, the latter in section 1.5, with a special focus on the more recent variants, which have stressed institutional factors specific to the formerly centrally-planned economies. Section 1.6 will conclude.

1.2 Stylized facts

A short look at the data, both in time and over countries, can give a better feel for the nature of the transitional output collapse.

Figure 1.1 shows the growth rate of Gross Domestic Product (GDP) and its main sectoral components in transition countries of CEE and the FSU in the period since the fall of the Berlin Wall, in 1989, until 1995. In the former year Poland was the first country to embark on a fully-fledged transition. Though other countries started theirs at different times and with different intensity, in particular those of the FSU, which only became separate states after the collapse of the Soviet Union at the end of 1991, figure 1.1 suffices to show a true transitional output collapse. The strongest decline was in 1992, when most of the FSU countries embarked on transition. Even by 1995 average growth had hardly turned positive yet, except in services. This under central planning most underdeveloped sector shows the smallest collapse; industry, the under central planning most overdeveloped sector, shows the largest collapse. More generally, as Kornai (1994) argues, roughly, the best performers are small, privately-owned and in services, while the worst performers are large, state-owned and in industry. Nevertheless, and most notably, all sectors collapsed for quite some time.

\[5\text{ Our source, World Bank (1997a), does not give this data for all countries for the full period. In the following, in case of missing data, the reported average is for a country/period subsample.} \]
Figure 1.1 Growth (in %), averaged over CEE and FSU, 1989-95

![Graph showing growth in various sectors over 1989-95](image)


Figure 1.2 illustrates the GDP-growth performance of the separate transition countries over the same period. Albania is the only country to show a positive figure. However, it did register strong output declines in 1991 and 1992 (of 24.8% and 3.3% respectively), at the beginning of, and even before its fully-fledged transition. The latter is also a most notable more general stylized fact. Albanian GDP increases thereafter obviously were strong, but have proved unsustainable after 1995, with the collapse of the pyramid schemes.\(^6\) Furthermore, Poland had a growth rate of around zero over this period, but all other countries show a negative figure, of mostly disastrous proportion. The average decline is more than 6% per year. Most of the worst-performing countries are the ones affected by war, but even leaving these out a true output collapse would remain. Generally, the FSU performs much worse than CEE. Within the FSU the Baltics perform relatively well.\(^7\)

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\(^6\) See Bezemer (2001) for an interesting analysis of the Albanian case. Note furthermore that the Albanian growth figures used here were revised downward substantially later on, into negative territory (Bezemer (2001) reports a 1989-95 average growth figure of -3.8%).

\(^7\) This also goes for Belarus and Uzbekistan, but their data is suspect because of political reasons.
1.3 Statistical artifact?

The transition needed also includes that of the statistical apparatus. Probably the simplest ‘explanation’ of the output collapse builds on the well-known deficiencies of official statistics in transition countries. Mainly due to conceptual problems with price indices and, particularly, inadequate reporting, the real extent of the GDP decline may be smaller than that officially
reported, but the question is by how much. Revisions performed for the Russian case can give an illustration.

Prices before transition were out of line with both costs and world prices, and goods were in any case often not available at those prices. As relative prices change during transition and resources move towards sectors of which prices have risen, output declines in base prices are overstated relative to declines measured at world or new prices. This point about price indices is related to the more general discussion about the welfare consequences of the transition, which is complicated and beyond the scope of this paper. Nevertheless, it may be noted that there are both factors that suggest a lesser welfare than output decline (for example: improvement of quality, disappearance of queuing, increase of political freedom) and factors that suggest the opposite (for example: increase of uncertainty, deterioration of health, widening of income distribution).

Under central planning, the statistical apparatus used the so-called ‘Material Product System’ (MPS). One of the main characteristics of the MPS was its reflection of the communist preoccupation with industrialization by excluding many services (in the so-called ‘non-material sphere’) from the measure of value added. Registering was mainly via the large state-owned enterprises, as an integral part of the plan. Transition meant a gradual phasing-out of the MPS, and adoption of the United Nations System of National Accounts (SNA) and the replacement of complete enumeration by survey-based methods of data collection. Problems in doing so implied that the statistical apparatus stayed too much geared towards registering exactly those parts of the economy that the previous section showed to be performing worst (large, state-owned, industry) and too little towards those performing best (small, privately-owned, services). The resulting overstatement of the output decline was particularly due to reporting incentives being inversely related to output growth: growing enterprises underreport, to evade taxes, declining enterprises overreport, to claim subsidies. Furthermore, a lot of the activities in the ‘shadow’ economy are inherently not registered. Among these are legal activities, for example goods and services production and consumption within households, as well as illegal activities, for example production by the Mafia.\(^8\) To be sure, the

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\(^8\) The current (1993) internationally adopted SNA actually recommends including the ‘hidden’ part of both legal and illegal production in the GDP estimate. While this is understandable from a purely statistical or a
shadow economy was already there under central planning, but it is fair to state that its share of the total economy has increased during transition, contributing to the overstatement of the output decline.\footnote{Of course, in as far as the official data has gradually improved for later years, the subsequent recovery is in fact overstated, a point generally not made.}

The alternative way to argue that the output decline is overstated because of inadequate reporting seems less valid. It consists of pointing towards the incentives that existed for state enterprises under central planning to overreport plan fulfillment figures. Resulting in too high a base, subsequently registered growth figures will be too low. This argument ignores the countervailing tendencies that existed to show lower production capacities and hide reserves in order to negotiate the lowest possible production targets. As Rosati (1994, p 424) puts it: 'In other words, it may be misleading to describe the central planning system as one with a strong tendency to inflate the actual output levels and to ignore an equally strong tendency to understate the potential output levels'. Here, the net impact is unclear.

On balance, the output decline seems overstated indeed, but not to a large extent, so that the term 'collapse' remains apt. Russia is an interesting case in point, because two serious studies exist which have tried to improve upon the GDP-growth figures for 1991-94, inspired by the idea that the output collapse in this most important transition country could not be quite as large as officially reported. The first was done by Gavrilenkov and Koen (1995). Noting that consumption data showed much less decline than production data, they tried to re-estimate output from the demand side. As argued in the more comprehensive re-estimation by the World Bank and the Russian State Committee for Statistics, Goskomstat (1995), however, as a legacy of the MPS, the most dependable data still relate to the production side. Therefore, World Bank and Goskomstat (1995) worked from this side.

Nevertheless, the two studies reach similar conclusions, as illustrated in table 1.1: the cumulative decline of Russian GDP over 1990-94 amounted to roughly one-third, as opposed
to the original official halving.\footnote{Another ‘re-estimation’, which attracted some attention, was done by Doboz and Pohl (1995). They compared trends in electricity consumption with trends in output, between which one would a priori expect a high degree of positive correlation. Their conclusion was that the output decline over 1989-93 was less than half the official decline. However, it seems inappropriate to use a single subcomponent of demand as a measure of macroeconomic development. Moreover, input-output coefficients and price elasticities have undergone major changes during transition and are in fact unknown.} Thus the output decline in Russia over this period may be smaller than originally reported, but it is still a true collapse, whether it is revised from the demand or the production side.\footnote{The European Bank for Reconstruction and Development (EBRD, 1994) performed an illustrative exercise for the Czech Republic, Hungary and Poland. A ‘compromise’ GDP series is produced for 1990-93 by adjusting the production-based series to account fully for small-scale private activity, and combining it thereafter with available data on consumption, fixed investment and the foreign balance. Tentative results suggest that the sign of the revisions to annual GDP growth is not even always positive. Only in the case of the Czech Republic did the revised series point to a consistently stronger annual output performance and thus a weaker cumulative output collapse.} It is notable that the discrepancies between the different estimates seem to get smaller over time. This is because, even before the 1995 recalculation, Goskomstat progressively introduced improvements in the coverage of the official data of 1993 and 1994, but not in those of 1991 and 1992. Also note that it is hard to see any bottoming-out for the Russian output collapse yet over this period. World Bank and Goskomstat (1995) strongly recommended that their revised GDP accounts replace the original Goskomstat series. Goskomstat accepted this recommendation and has implemented it.\footnote{They are also the ones on the World Bank (1997a) CD-ROM, referred to above.}

**Table 1.1 Alternative estimates of GDP growth (in %) in Russia, 1991-94**

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<tbody>
<tr>
<td>Original Goskomstat</td>
<td>-12.8</td>
<td>-19.2</td>
<td>-12.0</td>
<td>-15.0</td>
<td>-47.3</td>
</tr>
<tr>
<td>Gavrilenkov and Koen (1995)</td>
<td>-6.4</td>
<td>-14.0</td>
<td>-7.5</td>
<td>-9.5</td>
<td>-32.6</td>
</tr>
<tr>
<td>World Bank and Goskomstat (1995)</td>
<td>-5.0</td>
<td>-14.5</td>
<td>-8.7</td>
<td>-12.6</td>
<td>-35.2</td>
</tr>
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Source: Original studies.
industry and construction were severely hit. By 1994 only services were beginning to show a bottoming-out of the output collapse. These revised figures for Russia conform quite well still to the general picture drawn for CEE and the FSU in figure 1.1.

### Table 1.2 Revised estimates of GDP growth (in %) in Russia by origin, 1991-94

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<tbody>
<tr>
<td>Industry</td>
<td>-6.1</td>
<td>-18.2</td>
<td>-12.1</td>
<td>-18.3</td>
<td>-44.8</td>
</tr>
<tr>
<td>Agriculture</td>
<td>-5.7</td>
<td>-18.0</td>
<td>-14.6</td>
<td>-20.6</td>
<td>-47.6</td>
</tr>
<tr>
<td>Forestry</td>
<td>-3.7</td>
<td>-9.0</td>
<td>-4.0</td>
<td>-9.0</td>
<td>-23.4</td>
</tr>
<tr>
<td>Construction</td>
<td>-4.0</td>
<td>-9.0</td>
<td>-4.0</td>
<td>-9.0</td>
<td>-23.7</td>
</tr>
<tr>
<td>Other</td>
<td>-12.0</td>
<td>-33.0</td>
<td>-8.0</td>
<td>-17.0</td>
<td>-55.0</td>
</tr>
<tr>
<td>Services (total)</td>
<td>-5.7</td>
<td>-15.0</td>
<td>-12.0</td>
<td>-20.9</td>
<td>-44.2</td>
</tr>
<tr>
<td>Market</td>
<td>-1.9</td>
<td>-6.7</td>
<td>-3.4</td>
<td>-2.9</td>
<td>-14.1</td>
</tr>
<tr>
<td>Non-market</td>
<td>-4.4</td>
<td>-6.5</td>
<td>-3.2</td>
<td>-3.0</td>
<td>-16.1</td>
</tr>
<tr>
<td>Mixed</td>
<td>2.3</td>
<td>-12.8</td>
<td>-8.4</td>
<td>-8.7</td>
<td>-25.4</td>
</tr>
<tr>
<td></td>
<td>0.3</td>
<td>-5.6</td>
<td>-2.7</td>
<td>-0.9</td>
<td>-8.7</td>
</tr>
</tbody>
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#### 1.4 Demand driven?

Recognizing the transitional output collapse as real, it has been argued that it has to be explained primarily from the demand side by for example Rosati (1994). Focusing on the earliest transformer, Poland, as has been done in the debate in general, and checking the behavior of domestic expenditure categories, he draws the broad lesson that the transitional output collapse could have been smaller if stabilization policies would have been less restrictive. Rosati (1994) also sees a big role for the collapse of the Council for Mutual Economic Assistance (CMEA), in 1991, as a negative demand shock.

During transition in general demand certainly fell, but it is questionable whether this was mainly the result of too restrictive stabilization policies, and whether it was the primary cause of the output collapse, though it certainly contributed. Consumption fell under the influence of real wage decline. However, this was partly the result of increases of nominal wages being wiped out by increases of the Consumer Price Index (CPI), that is: not enough stabilization. The investment crisis seems the result of an increase of uncertainty, but
macroeconomic stabilization actually contributes to a decrease of uncertainty.\textsuperscript{13} The most obvious direct negative demand effect of stabilization policies must be in government expenditures. The traditional link between government finances and inflation necessitated a large fall in government expenditures for the purpose of stabilization.\textsuperscript{14} Certainly in Poland, which even registered a large and unintended government surplus in 1990, but also in other transition countries, this must have been a big contribution to the output collapse. However, in pursuing macroeconomic stabilization, policy makers probably needed to err on the safe side in order to gain credibility. Another problem with explanations of the transitional output collapse stressing the demand side is in the accompanying persistence (or even acceleration) of inflation, as figure 1.3 illustrates. If too little demand were the primary cause of such a large and long output collapse, we would have expected inflation to come down more strongly. Note that a comparison with figure 1.2 shows quite a general negative correlation between inflation and growth performance. If demand (supply) shocks were the primary culprit of the output collapse, in the longer run, a positive (negative) relationship between prices and output would have been expected, although it is admittedly hard to properly disentangle the separate importance of these shocks.\textsuperscript{15}

\textsuperscript{13} Since lower inflation figures usually also mean less volatile inflation figures.

\textsuperscript{14} Given the fact that transition was also accompanied by a collapse of government revenues.

\textsuperscript{15} As testified by the continuing debate on the importance of demand and supply shocks for output behavior in macroeconomics in general.
On the external-demand side, as the primary explanation for the output decline the collapse of the CMEA suffers from the same counterargument. Moreover, among the transition countries with the lowest growth and highest inflation, roughly: the FSU, there are a lot of energy exporters, for which demand is quite inelastic. To a large extent the CMEA could be characterized as an arrangement between centrally-planned economies under which the FSU traded subsidized energy with CEE in exchange for inferior goods and political and ideological allegiance and military security. An important reason for the collapse of the CMEA was the loss of priority of the latter, which implied a much larger direct negative demand shock for
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CEE. However, these countries, and certainly Poland, have also been quite successful in quickly redirecting their exports, especially to Western Europe.

1.5 Supply driven?

Though this does not disregard the role of demand decline, others have stressed the supply side as the primary cause of the transitional output collapse. Widespread price liberalization (including external liberalization and devaluation) rendered many activities highly unprofitable. However, in a purely standard theoretical setting it would make many other activities highly profitable. To explain the aggregate output collapse, at least, the pace of destruction needs to be higher than the pace of creation. This is intuitively plausible though, since creation typically requires new investment, which might be difficult to make under the existing imperfections in transition countries. Different supply-side stories try to explain the transitional output collapse from different imperfections from which purely standard theory abstracts, but some of them can be largely dismissed, as Schmieding (1993) shows.

One imperfection offered as an explanation for the output collapse is insufficient mobility of production factors. If these cannot move instantly from the declined-value to the increased-value activity (until marginal value productivities are once again equalized at full employment) total value added may decrease, even though the ultimate new equilibrium is more favorable. Schmieding (1993, p 222-223) argues that this argument does not apply to a structural adjustment at unchanged world market prices, but only for changes in external relative prices: ‘Whatever the internal upheavals, total value added as measured at the unchanged world market prices (italics added, LM) will remain unchanged if all factors of production remain in their present activities and continue to produce the same physical output with the same technology as before. Even a total lack of responsiveness to price signals does not suffice to explain the occurrence of the transformation crisis’. This is of course correct, although in registration an output collapse is possible, because originally registration was not at world market prices, but at distorted prices. This is not a supply-side argument however, but brings us back to a statistical argument as noted in section 1.3.
Of course it may be that production factors do not accept as their new pay whatever their genuine marginal value productivity happens to be at full employment. Particularly real wages may be inflexible downward (as they mostly are in full-grown market economies too). Even if production factors are completely mobile this problem does not vanish and it can explain an output collapse. Schmieding (1993, p 224) argues against this explanation, because: ‘At least in the crucial first phase of the transition process, the major factor price, the real wage, has declined substantially without causing labor unrest on a grand scale, be it because workers lack powerful and credible organizations, be it because workers genuinely accept the need for belt-tightening or be it because they consider the fact that shopping queues and other unpleasant features of the socialist past have vanished to be adequate non-monetary compensation for their loss of monetary purchasing power’. However, Blanchard (1997) argues that while real wages have indeed declined if the CPI is used as a deflator, this is not the case if the GDP-deflator or the Producer Price Index (PPI) is used, and the latter is relevant for production. Looking at Bulgaria, the Czech Republic, the Slovak Republic, Hungary and Poland, he shows that his working assumption of constant real production wages is not too bad an approximation to reality. Schmieding (1993) does not clearly state which price index he uses as a deflator, but, in any case, his other counterargument remains totally intact: the fact that output initially declined in all sectors implies that real factor price rigidity is an unconvincing explanation.\footnote{Incidentally, this also goes against the previous explanation, based on insufficient factor mobility.}

A first supply-side explanation that can potentially go with such a uniform output collapse is provided by the credit-crunch hypothesis by Calvo and Coricelli (1993). In their story, a lack of availability of (short-term bank) credit reduces the possibilities of financing working capital and thereby forces enterprises to reduce output, even otherwise viable ones. Although the credit market is surely one of the key underdeveloped markets in transition economies, Calvo and Coricelli (1993) do not clearly specify just why credit would not be forthcoming. Furthermore, their own data analysis for Bulgaria, the Czech Republic, Hungary, Poland and Romania only leads to the weak conclusion that the hypothesis that the output collapse may partly owe to a credit contraction cannot be ruled out. Calvo and Coricelli (1993, p 49) themselves even state: ‘Strictly speaking, our econometric findings are confined to the first stages of the Polish stabilization program’. Indeed, it is hard to see how a credit crunch
can be the primary cause of the transitional output collapse, if, as was mainly the case in the FSU, many enterprises have been kept afloat with soft credits (including arrears) for quite some time, while at the same time a uniform collapse was manifesting itself.

A more general supply-side explanation of the transitional output collapse is stressed by for example Schmieding (1993) and Kornai (1994). In their view reforms have destroyed the existing formal institutions of central planning, which had their own logic, without replacing them with the required market institutions, leading to destruction outpacing creation, and initially even to coordination disruptions, causing uniform output collapse. Historically, market economies have been co-shaped by state authorities, for example shaping and enforcing the rule of law (or ‘formal’ institutions). However, evolutionary forces involving long series of recurring situations through which new conventions (or ‘informal’ institutions) could be gradually established also played their role. Both things inherently take time.

More specific formal explanations of the above kind have hardly been developed yet, but will probably rely on political economy considerations, information asymmetries, negative externalities and the like. Recently, Blanchard and Kremer (1997) and Roland and Verdier (1997) have provided two interesting examples. The former develop a model in which a state enterprise, which formerly got its inputs through the central planner, faces a bargaining problem with each of its suppliers under bilateral specificity after liberalization. The driving force of the model is in the assumption that the state enterprise does not know which private-sector alternatives the suppliers have got under the new setting. Suppliers may bluff and ask for a high price for their inputs, the state enterprise in turn may refuse to pay (his restricted information set leaves him no choice but to offer a given price and take the risk of not getting inputs). This can lead to a breakdown in production, in fact triggered by the improvement in private opportunities.17 Roland and Verdier (1997), in a related model, base the output collapse on search frictions combined with relation-specific investments that take place only after a new long-term partner is found. Liberalization means the freedom for enterprises to search for new clients and suppliers, but search by many bad agents may reduce the quality of

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17 Note that Leijonhufvud’s (2000, but written in December 1992) otherwise also very insightful brief discussion of the nature of the depression in the FSU, already contains the seeds for the model by Blanchard and Kremer (1997).
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overall matches. If many enterprises prefer to keep searching at least one period, output can fall.

This kind of institutional explanations of the transitional output collapse can more fully account for a number of its particular features, as Schmieding (1993) argues. They can be classified as supply-side explanations because they start from (institutional) supply-side imperfections, but at the same time acknowledge the role of indirect (resulting) demand decline. Unlike the other supply-side explanations, they can not only explain the uniform nature of the collapse, but also the fact that it generally started even before transition, with the half-hearted, inconsistent efforts to partially reform the institutions of central planning (for example by Gorbachev). Better than the direct demand-side explanations, they can explain the coincidence of output collapse and persistent inflation. They also shed light on the influence of the collapse of the CMEA, which was dismissed as a direct demand-side explanation for the transitional output collapse in the previous section. It can be classified as a supply-side explanation on account of the change of the terms of trade implied, but only for the energy importers, certainly not for the energy exporters, which enjoyed a positive shock from this perspective. However, the collapse of the CMEA as an institution of central planning can be interpreted as the same sort of general explanation as the collapse of its internal institutions. This kind of explanations may also explain the fact that the collapse was generally stronger in the FSU than in CEE. Apart from some other worse initial conditions, the FSU had the most 'developed' institutions of central planning and the least 'market-memory'. The exception here is with the Baltics, but this may actually strengthen the point, as their output collapse ended relatively early, and they resumed growth before other FSU economies. Finally, better than both the direct demand-side and the other supply-side explanations, this kind of explanations can explain the rise of the shadow economy as a logical consequence of the appearance of a formal 'institutional vacuum'.

1.6 Conclusion

The transition has been accompanied by a uniform and real output collapse. Of course, it does not have one single common cause, and the intensity of the effects of the separate causes can
vary across countries and in time. Both demand and supply factors have a role in explaining the transitional output collapse. Nevertheless, it seems primarily an institutional supply-side phenomenon, as has been argued in the previous section. More generally, it has been gradually recognized that standard economic theory is ill suited to explain transition. It is mainly static, explaining allocation, and implicitly assumes all the relevant institutions are there, exogenous to the theory, while transition seems mainly a dynamic process of institutional change (for example van Ees and Garretsen, 1994; Knaack, 1996). From a policy perspective this implies that more stress could have been given to institution building, since, as Kornai (1994, p 49) puts it: ‘The development of market coordination takes time, which is one reason why the recession is protracted in many fields, but the period of development can be shortened by appropriate legal regulation and state initiatives. The government has committed many sins of omission in this respect’. The specific reasons for institutional coordination disruptions require more investigation. In agreement with Roland and Verdier (1997, p 18) it can be stated that ‘In the current state of knowledge, we think it is important to generate a class of models giving explanations for the output fall which rely on features specific to the transition process’.