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COMPUTING JOHANSEN STYLE SOLUTION WITH  
ORANI 78 : COMPLETING ABORTED SIMULATIONS  
OR USING PREVIOUS SOLUTIONS TO GENERATE  
ADDITIONAL RESULTS

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CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. COMPLETING A FAILED ORANI SIMULATION	2
II.1 Completing a simulation that aborted in the back solutions section	10
II.2 Completing a simulation that aborted in the printout section	11
III. ADDITIONAL SIMULATIONS USING PREVIOUSLY COMPUTED FILES	12
III.1 Attaching a basic solution and recomputing back-solutions and printout sections	14
III.2 Attaching basic and back solutions and recomputing the printout section	17
IV. CONCLUSION	19
REFERENCE	19
<u>Figures</u>	
II.1 A Subset of the Printout for an ORANI Simulation	3
II.2 Outline of Procedures for Completing a Failed ORANI Simulation	9



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I. INTRODUCTION

This manual is a supplement to Higgs and Parmenter (1982) (hereafter HP). HP contains instructions which enable users to compute solutions of the ORANI model and print out the results. Apart from control cards, the ORANI computer program consists of three sequential stages, namely the basic solution, back solutions and printout sections (see HP, table III.1). Sometimes, when attempting to run a simulation, the first stage, or the first and second stages, may be computed successfully but the job may fail at a later stage. If this happens the opportunity exists to save time and computing expense by attaching the successful stage(s) and recomputing only the unsuccessful stage(s). Similarly time and computing expense can be saved when computing additional ORANI simulations that have the same closure (i.e., the same exogenous/endogenous split of the variables) and the same indexation assumptions as some other ORANI simulation which has been computed previously and is still stored in the computing system. The procedure then is to attach the section(s) of the previous ORANI simulation that are of use and compute only the section(s)

that are specific to the new simulation. This document explains the required procedures. In section II we show how to determine which stages (if any) of a failed ORANI computation have been successful. We also explain the procedure required to complete the failed simulation. In section III we deal with computing additional ORANI simulations from jobs which have previously been computed and stored.

#### II. COMPLETING A FAILED ORANI SIMULATION

Figure II.1 reproduces the pages of an ORANI printout which document the progress in the computer of an illustrative simulation. From this we can identify which stage(s) of the simulation have been computed successfully. The successful computation of sections of the simulation are signified by messages which indicate that the output of the relevant sections has been catalogued (i.e., stored in the computer). For the basic-solution (see HP, subsection III.2) the message is the first underlined message in Figure II.1, labelled for reference purposes as "Message A". For the back-solution (see HP, subsection III.3) and printout (see HP, subsection III.4) sections the messages are the second and third underlined messages in Figure II.1 (labelled "Message B" and "Message C", respectively).

Figure II.2 outlines the procedures necessary to complete a simulation which has failed at any of the three stages.

#### (b) Printout section

Prepare cards for this section by following the instructions given in subsection III.4 of HP. Conclude the printout section with an "end of information" card (see HP subsection III.5).

#### IV CONCLUSION

This is the first of the series of supplementary computer documentation which we promised in the conclusion to H.P. It is intended to help ORANI users to minimise their computing bills. As our own computing budget has become an increasingly tight constraint on our activities, we have found procedures such as those described in this supplement increasingly important.

#### REFERENCE

Higgs, P.J. and B.R. Parmenter, "How to Compute a Johansen-Style Solution with the Melbourne Version of ORANI 78" IMPACT Computing Document No. C3-02, Melbourne, August 1982.









(iv) its turnkey file password. HP used LABTK (see HP subsection III.1 item (vii)).

In addition, it is necessary to choose,

(v) an except read password. (For the present purpose lets choose ABCXR as our except read password.)

In the following subsections, given items (i) - (v) above, we will first describe how to attach the basic solution of an existing simulation (e.g., the illustrative simulation from HP) and recompute both the back-solutions and printout sections. Finally, we explain how to attach both the basic and back solutions of an existing simulation and recompute only the printout section.

III.1 Attaching a basic solution and recomputing back-solutions and printout sections

The procedure required here is to run a card deck consisting of the following parts:

(a) Control section

The first 8 cards of this section are obtained by following the instructions given in HP for cards 1 to 8. Punching instructions for cards 9 and 10 are given below:

```

23,39,18 00105,728 CYJ      RP727 = VSN ADUN04 OF SET EMUS06 MOUNTED
23,39,19 00105,734 CYJ      RP727 = VSN ADUN06 OF SET EMUS06 MOUNTED
23,39,19 00105,741 CYJ      RP727 = VSN ADUN04 OF SET EMUS06 MOUNTED
23,39,20 00106,070 CYJ      RP1034 = VSN ADUN01 OF SET COMMON MOUNTED
23,39,31 00110,536 USR      STOP
23,39,31 00110,536 USR      264700 FINAL EXECUTION FL.
23,39,31 00110,537 USR      4,852 CP SECONDS EXECUTION TIME.
23,39,31 00110,537 LOD      *RETURN,TAPE10,TAPE18,TAPE19,TAPE55,TAPE20,TAPE25,TAPE26,TAPE27.
23,39,31 00110,550 LOD      *REWIND,TAPE51.
23,39,32 00110,555 JOB      *ATTACH,TAPE23,PHWRPC,IO=DIAXPH,SN=COMMON,PW=*****.
23,39,32 00110,558 CYJ      PF254 = CYCLE 4 ATTACHED FROM SN=COMMON
23,39,32 00110,562 JOB      *ATTACH,TAPE70,DM76STOLAPELS,IO=DIAX04,SN=DTB3006,PW=*****.
23,39,32 00110,563 CYJ      PF254 = CYCLE 1 ATTACHED FROM SN=EMUS06
23,39,32 00110,564 JOB      *REQUEST,TAPE52,*PF,SN=COMMON.
23,39,32 00110,566 JOB      *LDSET,LIR=DM76LIR.
23,39,32 00110,566 JOB      *LIRLOAD,DM76LIR,BCKSOL.
23,39,32 00110,567 JOB      *EXECUTE.
23,39,33 00110,930 CYJ      L0610 = FLS REQUIRED TO LOAD = 0015425 ONL.CGG
23,39,33 00110,930 CYJ      LD603 = EXECUTION INITIATED OS,EXP
23,39,33 00110,930 USR      FORTRAN LIBRARY 520 07/04/81
23,39,33 00110,943 CYJ      RP1034 = VSN ADUN01 OF SET COMMON MOUNTED
23,39,33 00110,947 CYJ      RP727 = VSN ADUN06 OF SET EMUS06 MOUNTED
23,39,33 00110,948 CYJ      RP727 = VSN ADUN06 OF SET COMMON MOUNTED
23,40,33 00376,852 USR      STOP
23,40,33 00376,852 USR      137200 FINAL EXECUTION FL.
23,40,33 00376,852 USR      265,910 CP SECONDS EXECUTION TIME.
23,40,33 00376,854 JOB      *CATALOG,TAPE52,PHWRPACXSOL,IO=DIAXPH,TK=*****,XR=*****,PW=*****,*****,RP=10.
23,40,33 00376,855 CYJ      FILE SIZE = 1268730 *DPOS.
23,40,33 00376,860 CYJ      PF260 = CYCLE 3 CATALOGED ON SN=COMMON
23,40,33 00376,860 LOD      *RETURN,TAPE51,TAPE23,TAPE52,TAPE70.
23,40,33 00376,870 LOD      *RETURN,DM76LIR.
23,40,33 00376,875 LOD      *REVERT.
23,40,33 00376,883 LOD      *PIERUN,PHWRP,DIAXPH,COMMON,LABTK,LABXR,ORANTK.
23,40,33 00376,926 JOB      *COMMENT.
23,40,33 00376,926 JOB      *COMMENT. *** BEGIN PIE ***
23,40,33 00376,927 JOB      *COMMENT.
23,40,33 00376,928 LOD      *GETSET,DT02344.
23,40,33 00376,931 CYJ      RP223 = MNTHACRO MOUNT = SN=DTB2344 VSN=
23,40,34 00376,934 CYJ      SET PARAMETERS SUBSTITUTED
23,40,34 00376,934 CYJ      RP1034 = VSN ADUN05 OF SET EMUS05 MOUNTED
23,40,34 00376,935 LOD      *GETSET,DT03006.
23,40,34 00376,938 CYJ      RP223 = MNTHACRO MOUNT = SN=DTB3006 VSN=
23,40,34 00376,941 CYJ      SET PARAMETERS SUBSTITUTED
23,40,34 00376,941 CYJ      RP1034 = VSN ADUN06 OF SET EMUS06 MOUNTED
23,40,34 00376,942 LOD      *COMMON.
23,40,34 00376,945 LOD      *GETSET,COMMON.
23,40,34 00376,949 CYJ      RP223 = MNTHACRO MOUNT = SN=COMMON VSN=
23,40,34 00377,001 CYJ      SET PARAMETERS SUBSTITUTED
23,40,34 00377,001 CYJ      RP1034 = VSN ADUN02 OF SET COMMON MOUNTED
23,40,34 00377,002 LOD      *REVERT,CCL
23,40,34 00377,015 JOB      *ATTACH,DM76LIR,DMORANITALIA,IO=DIAX0M,SN=DTB3006,MR=1.
23,40,34 00377,019 CYJ      PF254 = CYCLE 2 ATTACHED FROM SN=EMUS06
23,40,34 00377,019 LOD      *DCR.
23,40,35 00377,045 LOD      *IFE,NOT,FILE(DCRLIR,45),D.
23,40,35 00377,052 JOB      *ATTACH,DCRLIR,DCR,IO=PUBLIC,SN=SYSTEM. LIBRARY OF CCL PROCEDURES
23,40,35 00377,054 CYJ      PF254 = CYCLE 27 ATTACHED FROM SN=SYSTEM
23,40,35 00377,056 JOB      *LIBRARY,*,DCRLIR.
23,40,35 00377,062 LOD      *ENDIF,D.
23,40,35 00377,070 LOD      *REVERT,CCL
23,40,36 00377,080 LOD      *NAFS.

```

(MESSAGE B)

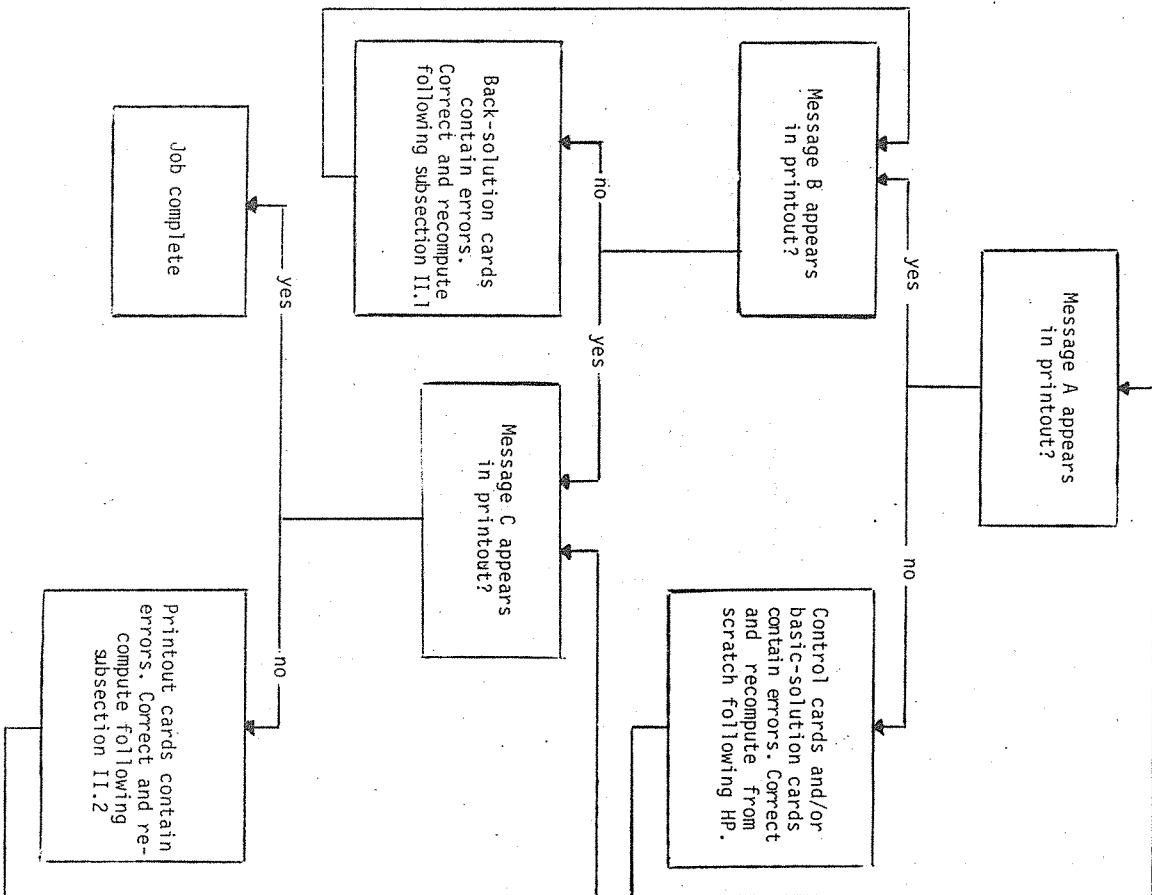


III. ADDITIONAL SIMULATIONS USING PREVIOUSLY COMPUTED FILES

It is possible to save time and computing expense when computing additional ORANI simulations if:

- (i) the additional simulations have the same closure (see HP subsection III.2.2) and the same assumptions concerning the level of indexation of wages (see HP subsection III.2.4.2) and "other costs" (see HP subsection III.2.4.6) as a previous ORANI simulation.
- (ii) in the card deck for the previous simulation, the basic-solution exogenous-variable card (HP, subsection III.2.3 and card 34) and (where applicable) the back-solutions exogenous variable card (HP, subsection III.3.1 and card 39) had "1's" punched in columns corresponding to the code numbers of each vector variable which is to contain any non-zero exogenous components in the additional simulations. (Note that on these cards you were permitted to punch "1's" in columns corresponding to the code numbers of as many of the exogenous variables as you desire. However there is a trade-off between current and future expense as the more "1's" that are punched on these cards the more expensive the simulation is to run.)

Figure II.2 Outline of Procedures for Completing Failed ORANI Simulations



### II.1 Completing a simulation that aborted in the back solutions section

To complete a simulation that aborted in the back solutions section run a subset of the original card deck consisting of the following three parts:

(i) a subset of the control cards, including the "end of section" card (see HP section III.1.1). The omission from the control cards section is card 9 of HP. This card is no longer required as it instructed the computer to run the basic solution program, which has already been computed successfully. The remaining control-section cards will attach the catalogued basic solution and instruct the computer to run the back solutions and printout sections of the program. Note that to compute the back solutions and printout sections of the program is still very time consuming. Therefore on control card 3 leave the priority and time limit as P0070 and T1000, respectively.

(ii) the corrected cards for the back solutions section, including the "end of section" card (see HP subsection III.3).

(iii) the cards specifying the printout, including the "end of information" card (see HP subsections III.4 and III.5).

### II.2 Completing a simulation that aborted in the printout section

To complete a simulation that aborted in the printout section run a subset of the original card deck consisting of the following two parts:

(i) a subset of the control cards, including the "end of section" card (see HP subsection III.1.1). The omissions from the control cards section are cards 9 and 10 of HP. These cards are no longer required as they instructed the computer to run, respectively, the basic solution program and back-solutions program, if applicable. The remaining control cards will attach the successfully computed basic-solution and back-solution sections and instruct the computer to run only the printout section of the program. Note that to compute the printout section of the program is not very time consuming. Therefore on control card 3 you should reduce the time limit to T10 and increase the priority to P1000.

(ii) the corrected cards specifying the printout, including the "end of information" card (see HP subsections III.4 and III.5).