

CONCLUDING REMARKS

The thesis presents a new methodology to find the queue length and waiting time distributions in a system of two or more parallel queues. The proposed method has potential applications in finding the above distributions and other important characteristics in a variety of manufacturing systems, communication systems, computer systems and other related areas.

The results in the literature on the system of dependent queues are usually restricted to the case when the arrival streams are Poisson processes and the service times are exponentially distributed. The present thesis frees the arrival and service times from the above restrictions by assuming that each of them follows a hypoexponential distribution in two stages.

The derivation of the balance equations in the resulting system with more general distributions is made possible by the use of a computer to generate the large amount of codes which represent the balance equations. The solution of the balance equations to the required level of accuracy is made possible by the method proposed in the thesis.

However when the number M of queues is too large, it would be difficult for a computer to handle the extremely large number of vectors of characteristics of the system. Further research may thus be carried out to solve the related dimensionality problem. Although the thesis concentrates on only two interaction schemes, the methods proposed in the thesis may still be applicable to the cases with other interaction schemes such as the schemes which incorporate features like balking of queue, reneging of queue and jockeying of queue, and switching over to another queue when the customer is still in the process of being served.

APPENDIX A

Representation of balance equations by codes in a system of two dependent
Hypo(2)/Hypo(2)/1 queues for $0 \leq n_1^{(k)} + n_2^{(k)} \leq 2$.

Constant	h						Power							
-1	0	1	0	1	0	0	0	0	1	0	0	0	0	0
-1	0	1	0	1	0	0	0	0	0	0	1	0	0	0
1	2	1	0	1	1	0	0	1	0	0	0	0	0	0
1	0	1	2	1	0	1	0	0	0	0	1	0	0	0
1*														
-1	0	1	0	2	0	0	0	0	1	0	0	0	0	0
-1	0	1	0	2	0	0	0	0	0	0	0	1	0	0
1	2	1	0	2	1	0	0	1	0	0	0	0	0	0
1	0	1	2	2	0	1	0	0	0	0	0	1	0	0
1	0	1	0	1	0	0	0	0	0	0	0	1	0	0
1*														
-1	0	1	1	1	0	1	0	0	1	0	0	0	0	0
-1	0	1	1	1	0	1	0	0	0	0	1	0	0	0
-1	0	1	1	1	0	1	0	0	0	0	0	1	0	0
1	2	1	1	1	1	1	0	1	0	0	0	0	0	0
1	0	2	0	1	0	0	0	0	0	1	0	0	0	0
1	0	1	2	1	0	2	0	0	0	0	0	1	0	0
1	0	1	0	2	0	0	0	0	0	0	0	0	1	0
1*														
-1	0	1	1	2	0	1	0	0	1	0	0	0	0	0
-1	0	1	1	2	0	1	0	0	0	0	1	0	0	0
-1	0	1	1	2	0	1	0	0	0	0	0	0	1	0
1	2	1	1	2	1	1	0	1	0	0	0	0	0	0
1	0	2	0	2	0	0	0	0	0	1	0	0	0	0
1	0	1	2	2	0	2	0	0	0	0	1	0	0	0
1	0	1	1	1	0	1	0	0	0	0	0	1	0	0
1*														
-1	0	1	2	1	0	1	0	0	1	0	0	0	0	0
-1	0	1	2	1	0	1	0	0	0	0	1	0	0	0
-1	0	1	2	1	0	1	0	0	0	0	0	1	0	0
1	2	1	2	1	1	1	0	1	0	0	0	0	0	0
1	0	2	0	2	0	0	0	0	0	1	0	0	0	0
1	0	1	2	2	0	2	0	0	0	0	1	0	0	0
1	0	1	1	1	0	1	0	0	0	0	0	1	0	0
1*														
-1	0	1	2	2	0	1	0	0	0	1	0	0	0	0
-1	0	1	2	2	0	1	0	0	0	0	1	0	0	0
-1	0	1	2	2	0	1	0	0	0	0	0	1	0	0
1	2	1	2	2	1	1	0	1	0	0	0	0	0	0
1	0	1	1	2	0	1	0	0	0	1	0	0	0	0
1	0	1	2	1	0	1	0	0	0	0	1	0	0	0
1*														
-1	0	2	0	1	0	0	0	0	0	1	0	0	0	0
-1	0	2	0	1	0	0	0	0	0	0	1	0	0	0
1	2	2	0	1	1	0	0	1	0	0	0	0	0	0
1	0	1	0	1	0	0	0	0	1	0	0	0	0	0
1	0	2	2	1	0	1	0	0	0	0	1	0	0	0
1*														
-1	0	2	0	2	0	0	0	0	0	1	0	0	0	0
-1	0	2	0	2	0	0	0	0	0	0	1	0	0	0
1	2	2	0	2	1	0	0	1	0	0	0	0	0	0
1	0	1	0	2	0	0	0	0	1	0	0	0	0	0
1	0	2	2	2	0	1	0	0	0	0	1	0	0	0
1	0	2	0	1	0	0	0	0	0	0	0	1	0	0
1*														

Appendix A, continued

Constant	h	Power							
-1	0 2 1 1 0 1	0	0	0	1	0	0	0	0
-1	0 2 1 1 0 1	0	0	0	0	1	0	0	0
-1	0 2 1 1 0 1	0	0	0	0	0	0	1	0
1	2 2 1 1 1 1	0	1	0	0	0	0	0	0
1	0 1 1 1 0 1	0	0	1	0	0	0	0	0
1	0 2 2 1 0 2	0	0	0	0	0	1	0	0
1	0 2 0 2 0 0	0	0	0	0	0	0	0	1
1*									
-1	0 2 1 2 0 1	0	0	0	1	0	0	0	0
-1	0 2 1 2 0 1	0	0	0	0	1	0	0	0
-1	0 2 1 2 0 1	0	0	0	0	0	0	0	1
1	2 2 1 2 1 1	0	1	0	0	0	0	0	0
1	0 1 1 2 0 1	0	0	1	0	0	0	0	0
1	0 2 2 2 0 2	0	0	0	0	0	1	0	0
1	0 2 1 1 0 1	0	0	0	0	0	0	1	0
1*									
-1	0 2 2 1 0 1	0	0	0	1	0	0	0	0
-1	0 2 2 1 0 1	0	0	0	0	0	1	0	0
-1	0 2 2 1 0 1	0	0	0	0	0	0	1	0
1	2 2 2 1 1 1	0	1	0	0	0	0	0	0
1	0 1 2 1 0 1	0	0	1	0	0	0	0	0
1	0 2 1 2 0 1	0	0	0	0	1	0	0	0
1	0 2 2 1 0 1	0	0	0	0	0	0	1	0
1*									
-1	0 2 2 2 0 1	0	0	0	1	0	0	0	0
-1	0 2 2 2 0 1	0	0	0	0	0	1	0	0
-1	0 2 2 2 0 1	0	0	0	0	0	0	0	1
1	2 2 2 2 1 1	0	1	0	0	0	0	0	0
1	0 1 2 2 0 1	0	0	1	0	0	0	0	0
1	0 2 1 2 0 1	0	0	0	0	1	0	0	0
1	0 2 2 1 0 1	0	0	0	0	0	0	1	0
1*									
-1	1 1 0 1 1 0	1	0	0	0	0	0	0	0
-1	1 1 0 1 1 0	0	0	1	0	0	0	0	0
-1	1 1 0 1 1 0	0	0	0	0	0	0	1	0
1	2 1 0 1 2 0	0	1	0	0	0	0	0	0
1	0 2 0 1 0 0	0	0	0	1	0	0	0	1
1	1 1 2 1 1 1	0	0	0	0	0	1	0	0
1	0 1 0 2 0 0	0	0	0	0	0	0	0	1
1*									
-1	1 1 0 2 1 0	1	0	0	0	0	0	0	0
-1	1 1 0 2 1 0	0	0	1	0	0	0	0	0
-1	1 1 0 2 1 0	0	0	0	0	0	0	0	1
1	2 1 0 2 2 0	0	1	0	0	0	0	0	0
1	0 2 0 2 0 0	0	0	0	1	0	0	0	1
1	1 1 2 2 1 1	0	0	0	0	0	1	0	0
1	1 1 0 2 0 0	0	0	0	0	0	0	1	0
1*									
-1	1 1 1 1 1 1	1	0	0	0	0	0	0	0
-1	1 1 1 1 1 1	0	0	1	0	0	0	0	0
-1	1 1 1 1 1 1	0	0	0	0	1	0	0	0
-1	1 1 1 1 1 1	0	0	0	0	0	0	1	0
1	2 1 1 1 2 1	0	1	0	0	0	0	0	0
1	0 2 1 1 0 1	0	0	0	1	0	0	0	1
1	1 2 0 1 1 0	0	0	0	0	1	0	0	0
1	1 1 2 1 1 2	0	0	0	0	0	1	0	0
1	1 1 0 2 1 0	0	0	0	0	0	0	1	0
1	0 1 1 2 0 1	0	0	0	0	0	0	1	0
1*									

Appendix A, continued

Constant	h	Power
-1	1 1 1 2 1 1	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
-1	1 1 1 2 1 1	0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
-1	1 1 1 2 1 1	0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
-1	1 1 1 2 1 1	0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0
1	2 1 1 2 2 1	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	0 2 1 2 0 1	0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0
1	1 2 0 2 1 0	0 0 0 1 0 0 0 0 0 0 0 0 0 1 0 0
1	1 1 2 2 1 2	0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
1	1 1 1 1 1 1	0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
1*		
-1	1 1 2 1 1 1	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
-1	1 1 2 1 1 1	0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
-1	1 1 2 1 1 1	0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
-1	1 1 2 1 1 1	0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0
1	2 1 2 1 2 1	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	0 2 2 1 0 1	0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0
1	1 1 1 1 1 1	0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
1	0 1 2 2 0 1	0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 1
1*		
-1	1 1 2 2 1 1	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
-1	1 1 2 2 1 1	0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
-1	1 1 2 2 1 1	0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
-1	1 1 2 2 1 1	0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0
1	2 1 2 2 2 1	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	0 2 2 2 0 1	0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0
1	1 1 1 2 1 1	0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
1	1 1 2 1 1 1	0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
1*		
-1	1 2 0 1 1 0	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
-1	1 2 0 1 1 0	0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
-1	1 2 0 1 1 0	0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0
1	2 2 0 1 2 0	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	1 1 0 1 1 0	0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
1	1 2 2 1 1 1	0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
1	0 2 0 2 0 0	0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 1
1*		
-1	1 2 0 2 1 0	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
-1	1 2 0 2 1 0	0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
-1	1 2 0 2 1 0	0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0
1	2 2 0 2 2 0	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	1 1 0 2 1 0	0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
1	1 2 2 2 1 1	0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
1	1 2 0 1 1 0	0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0
1*		
-1	1 2 1 1 1 1	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
-1	1 2 1 1 1 1	0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
-1	1 2 1 1 1 1	0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
-1	1 2 1 1 1 1	0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0
1	2 2 1 1 2 1	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	1 1 1 1 1 1	0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
1	1 2 2 2 1 2	0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
1	1 2 0 2 1 0	0 0 0 0 0 0 0 0 0 1 0 0 0 0 1 0
1	0 2 1 2 0 1	0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 1
1*		
-1	1 2 1 2 1 1	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
-1	1 2 1 2 1 1	0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
-1	1 2 1 2 1 1	0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
-1	1 2 1 2 1 1	0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
1	2 2 1 2 2 1	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	1 1 1 2 1 1	0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
1	1 2 2 2 1 2	0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
1	1 2 1 1 1 1	0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0

Appendix A, continued

Constant	h							Power									
-1	1	2	2	1	1	1		1	0	0	0	0	0	0	0	0	0
-1	1	2	2	1	1	1		0	0	0	1	0	0	0	0	0	0
-1	1	2	2	1	1	1		0	0	0	0	0	1	0	0	0	0
-1	1	2	2	1	1	1		0	0	0	0	0	0	1	0	0	0
1	2	2	2	1	2	1		0	1	0	0	0	0	0	0	0	0
1	1	2	1	1	1	1		0	0	1	0	0	0	0	0	0	0
1	1	2	1	1	1	1		0	0	0	0	1	0	0	0	0	0
1	0	2	2	2	0	1		0	0	0	0	0	0	1	0	0	1
1*																	
-1	1	2	2	2	1	1		1	0	0	0	0	0	0	0	0	0
-1	1	2	2	2	1	1		0	0	0	1	0	0	0	0	0	0
-1	1	2	2	2	1	1		0	0	0	0	0	1	0	0	0	0
-1	1	2	2	2	1	1		0	0	0	0	0	0	1	0	0	0
1	2	2	2	2	2	1		0	1	0	0	0	0	0	0	0	0
1	1	2	2	2	1	1		0	0	1	0	0	0	0	0	0	0
1	1	2	1	2	1	1		0	0	0	0	1	0	0	0	0	0
1	1	2	2	1	1	1		0	0	0	0	0	1	0	0	0	0
1*																	
-1	2	1	0	1	1	0		0	1	0	0	0	0	0	0	0	0
-1	2	1	0	1	1	0		0	0	1	0	0	0	0	0	0	0
-1	2	1	0	1	1	0		0	0	0	0	0	0	1	0	0	0
1	1	1	0	1	1	0		1	0	0	0	0	0	0	0	0	0
1	2	1	2	1	1	1		0	0	0	0	0	1	0	0	0	0
1	2	1	0	1	1	0		0	0	0	0	0	0	1	0	0	0
1*								0	1	0	0	0	0	0	0	0	0
-1	2	1	0	2	1	0		0	0	1	0	0	0	0	0	0	0
-1	2	1	0	2	1	0		0	0	0	0	0	0	0	1	0	0
-1	2	1	0	2	1	0		0	0	0	0	0	0	0	0	0	0
1	1	1	0	2	1	0		1	0	0	0	0	0	0	0	0	0
1	2	1	2	2	1	1		0	0	0	0	0	1	0	0	0	0
1	2	1	0	1	1	0		0	0	0	0	0	0	1	0	0	0
1*								0	0	0	0	0	0	0	1	0	0
-1	2	1	1	1	1	1		0	1	0	0	0	0	0	0	0	0
-1	2	1	1	1	1	1		0	0	1	0	0	0	0	0	0	0
-1	2	1	1	1	1	1		0	0	0	0	1	0	0	0	0	0
-1	2	1	1	1	1	1		0	0	0	0	0	0	1	0	0	0
1	1	1	1	1	1	1		1	0	0	0	0	0	0	0	0	0
1	2	2	0	1	1	0		0	0	0	1	0	0	0	0	1	0
1	2	1	2	1	1	2		0	0	0	0	0	1	0	0	0	0
1	2	1	0	2	1	0		0	0	0	0	0	0	1	0	1	0
1*								0	0	0	0	0	0	0	1	0	0
-1	2	1	1	2	1	1		0	1	0	0	0	0	0	0	0	0
-1	2	1	1	2	1	1		0	0	1	0	0	0	0	0	0	0
-1	2	1	1	2	1	1		0	0	0	0	1	0	0	0	0	0
-1	2	1	1	2	1	1		0	0	0	0	0	0	1	0	0	0
1	1	1	1	2	1	1		1	0	0	0	0	0	0	0	0	0
1	2	2	0	2	1	0		0	0	0	1	0	0	0	0	1	0
1	2	1	2	2	1	2		0	0	0	0	0	1	0	0	0	0
1	2	1	1	0	2	1		0	0	0	0	0	0	1	0	1	0
1*								0	0	0	0	0	0	0	1	0	0
-1	2	1	1	2	1	1		0	1	0	0	0	0	0	0	0	0
-1	2	1	1	2	1	1		0	0	1	0	0	0	0	0	0	0
-1	2	1	1	2	1	1		0	0	0	0	1	0	0	0	0	0
-1	2	1	1	2	1	1		0	0	0	0	0	1	0	0	0	0
1	1	1	1	2	1	1		1	0	0	0	0	0	0	0	0	0
1	2	2	0	2	1	1		0	0	0	1	0	0	0	0	1	0
1	2	1	2	2	1	2		0	0	0	0	0	1	0	0	0	0
1	2	1	1	1	1	1		0	0	0	0	0	0	1	0	1	0
1*								0	0	0	0	0	0	0	1	0	0
-1	2	1	2	1	1	1		0	1	0	0	0	0	0	0	0	0
-1	2	1	2	1	1	1		0	0	1	0	0	0	0	0	0	0
-1	2	1	2	1	1	1		0	0	0	0	1	0	0	0	0	0
-1	2	1	2	1	1	1		0	0	0	0	0	1	0	0	0	0
1	1	1	2	1	1	1		1	0	0	0	0	0	0	0	0	0
1	2	1	2	1	1	1		0	0	0	0	1	0	0	0	0	0
1	2	1	2	1	1	1		0	0	0	0	0	1	0	0	0	0
1*								0	0	0	0	0	0	0	1	0	0

Appendix A, continued

Constant	h	Power									
-1	2 2 0 1 1 0	0	1	0	0	0	0	0	0	0	0
-1	2 2 0 1 1 0	0	0	0	1	0	0	0	0	0	0
-1	2 2 0 1 1 0	0	0	0	0	0	0	1	0	0	0
1	1 2 0 1 1 0	1	0	0	0	0	0	0	0	0	0
1	2 1 0 1 1 0	0	0	1	0	0	0	0	0	0	0
1	2 2 2 1 1 1	0	0	0	0	1	0	0	0	0	0
1*											
-1	2 2 0 2 1 0	0	1	0	0	0	0	0	0	0	0
-1	2 2 0 2 1 0	0	0	0	1	0	0	0	0	0	0
-1	2 2 0 2 1 0	0	0	0	0	0	0	0	1	0	0
1	1 2 0 2 1 0	1	0	0	0	0	0	0	0	0	0
1	2 1 0 2 1 0	0	0	1	0	0	0	0	0	0	0
1	2 2 2 2 1 1	0	0	0	0	1	0	0	0	0	0
1	2 2 0 1 1 0	0	0	0	0	0	1	0	0	0	0
1*											
-1	2 2 1 1 1 1	0	1	0	0	0	0	0	0	0	0
-1	2 2 1 1 1 1	0	0	0	1	0	0	0	0	0	0
-1	2 2 1 1 1 1	0	0	0	0	1	0	0	0	0	0
-1	2 2 1 1 1 1	0	0	0	0	0	0	1	0	0	0
1	1 2 1 1 1 1	1	0	0	0	0	0	0	0	0	0
1	2 1 1 1 1 1	0	0	1	0	0	0	0	0	0	0
1	2 2 2 1 1 2	0	0	0	0	0	1	0	0	0	0
1	2 2 0 2 1 0	0	0	0	0	0	0	1	0	0	0
1*											
-1	2 2 1 2 1 1	0	1	0	0	0	0	0	0	0	0
-1	2 2 1 2 1 1	0	0	0	1	0	0	0	0	0	0
-1	2 2 1 2 1 1	0	0	0	0	1	0	0	0	0	0
-1	2 2 1 2 1 1	0	0	0	0	0	0	0	1	0	0
1	1 2 1 2 1 1	1	0	0	0	0	0	0	0	0	0
1	2 1 1 2 1 1	0	0	1	0	0	0	0	0	0	0
1	2 2 2 2 1 2	0	0	0	0	0	1	0	0	0	0
1	2 2 1 1 1 1	0	0	0	0	0	0	1	0	0	0
1*											
-1	2 2 2 1 1 1	0	1	0	0	0	0	0	0	0	0
-1	2 2 2 1 1 1	0	0	0	1	0	0	0	0	0	0
-1	2 2 2 1 1 1	0	0	0	0	0	1	0	0	0	0
-1	2 2 2 1 1 1	0	0	0	0	0	0	0	1	0	0
1	1 2 2 1 1 1	1	0	0	0	0	0	0	0	0	0
1	2 1 2 1 1 1	0	0	1	0	0	0	0	0	0	0
1	2 2 1 1 1 1	0	0	0	0	1	0	0	0	0	0
1*											
-1	2 2 2 2 1 1	0	1	0	0	0	0	0	0	0	0
-1	2 2 2 2 1 1	0	0	0	1	0	0	0	0	0	0
-1	2 2 2 2 1 1	0	0	0	0	0	1	0	0	0	0
-1	2 2 2 2 1 1	0	0	0	0	0	0	0	0	1	0
1	1 2 2 2 1 1	1	0	0	0	0	0	0	0	0	0
1	2 1 2 2 1 1	0	0	1	0	0	0	0	0	0	0
1	2 2 1 2 1 1	0	0	0	0	1	0	0	0	0	0
1	2 2 2 1 1 1	0	0	0	0	0	0	1	0	0	0
1*											

APPENDIX B

The complete set of feasible events in $A = \{A_1, A_2, \dots, A_{116}\}$.

i	Component of A_i	i	Component of A_i
1	1 0 0 0 0 0 -1 -1 -1	59	0 0 0 0 -1 1 -1 -1 32
2	0 1 0 0 0 0 -1 -1 -1	60	0 0 0 0 -1 1 -1 -1 33
3	0 1 0 0 0 0 11 -1 -1	61	0 0 0 0 -1 0 -1 -1 -1
4	0 1 0 0 0 0 12 -1 -1	62	-1 1 -1 0 0 0 -1 -1 -1
5	0 1 0 0 0 0 13 -1 -1	63	-1 1 -1 0 0 0 11 -1 -1
6	0 0 1 0 0 0 -1 -1 -1	64	-1 1 -1 0 0 0 12 -1 -1
7	0 0 0 1 0 0 -1 -1 -1	65	-1 1 -1 0 0 0 13 -1 -1
8	0 0 0 1 0 0 -1 21 -1	66	-1 0 -1 1 0 0 -1 -1 -1
9	0 0 0 1 0 0 -1 22 -1	67	-1 0 -1 1 0 0 -1 21 -1
10	0 0 0 1 0 0 -1 23 -1	68	-1 0 -1 1 0 0 -1 22 -1
11	0 0 0 0 1 0 -1 -1 -1	69	-1 0 -1 1 0 0 -1 23 -1
12	0 0 0 0 0 1 -1 -1 -1	70	-1 0 -1 0 1 0 -1 -1 -1
13	0 0 0 0 0 1 -1 -1 31	71	-1 0 -1 0 0 1 -1 -1 -1
14	0 0 0 0 0 1 -1 -1 32	72	-1 0 -1 0 0 1 -1 -1 31
15	0 0 0 0 0 1 -1 -1 33	73	-1 0 -1 0 0 1 -1 -1 32
16	0 0 0 0 0 0 -1 -1 -1	74	-1 0 -1 0 0 1 -1 -1 33
17	-1 1 0 0 0 0 -1 -1 -1	75	-1 0 -1 0 0 0 -1 -1 -1
18	-1 1 0 0 0 0 11 -1 -1	76	-1 1 0 0 -1 0 -1 -1 -1
19	-1 1 0 0 0 0 12 -1 -1	77	-1 1 0 0 -1 0 11 -1 -1
20	-1 1 0 0 0 0 13 -1 -1	78	-1 1 0 0 -1 0 12 -1 -1
21	-1 0 1 0 0 0 -1 -1 -1	79	-1 1 0 0 -1 0 13 -1 -1
22	-1 0 0 1 0 0 -1 -1 -1	80	-1 0 1 0 -1 0 -1 -1 -1
23	-1 0 0 1 0 0 -1 21 -1	81	-1 0 0 1 -1 0 -1 -1 -1
24	-1 0 0 1 0 0 -1 22 -1	82	-1 0 0 1 -1 0 -1 21 -1
25	-1 0 0 1 0 0 -1 23 -1	83	-1 0 0 1 -1 0 -1 22 -1
26	-1 0 0 0 1 0 -1 -1 -1	84	-1 0 0 1 -1 0 -1 23 -1
27	-1 0 0 0 0 1 -1 -1 -1	85	-1 0 0 0 -1 1 -1 -1 -1
28	-1 0 0 0 0 1 -1 -1 31	86	-1 0 0 0 -1 1 -1 -1 31
29	-1 0 0 0 0 1 -1 -1 32	87	-1 0 0 0 -1 1 -1 -1 32
30	-1 0 0 0 0 1 -1 -1 33	88	-1 0 0 0 -1 1 -1 -1 33
31	-1 0 0 0 0 0 -1 -1 -1	89	-1 0 0 0 -1 0 -1 -1 -1
32	1 0 -1 0 0 0 -1 -1 -1	90	1 0 -1 0 -1 0 -1 -1 -1
33	0 1 -1 0 0 0 -1 -1 -1	91	0 1 -1 0 -1 0 -1 -1 -1
34	0 1 -1 0 0 0 11 -1 -1	92	0 1 -1 0 -1 0 11 -1 -1
35	0 1 -1 0 0 0 12 -1 -1	93	0 1 -1 0 -1 0 12 -1 -1
36	0 1 -1 0 0 0 13 -1 -1	94	0 1 -1 0 -1 0 13 -1 -1
37	0 0 -1 1 0 0 -1 -1 -1	95	0 0 -1 1 -1 0 -1 -1 -1
38	0 0 -1 1 0 0 -1 21 -1	96	0 0 -1 1 -1 0 -1 21 -1
39	0 0 -1 1 0 0 -1 22 -1	97	0 0 -1 1 -1 0 -1 22 -1
40	0 0 -1 1 0 0 -1 23 -1	98	0 0 -1 1 -1 0 -1 23 -1
41	0 0 -1 0 1 0 -1 -1 -1	99	0 0 -1 0 -1 1 -1 -1 -1
42	0 0 -1 0 0 1 -1 -1 -1	100	0 0 -1 0 -1 1 -1 -1 31
43	0 0 -1 0 0 1 -1 -1 31	101	0 0 -1 0 -1 1 -1 -1 32
44	0 0 -1 0 0 1 -1 -1 32	102	0 0 -1 0 -1 1 -1 -1 33
45	0 0 -1 0 0 1 -1 -1 33	103	0 0 -1 0 -1 0 -1 -1 -1
46	0 0 -1 0 0 0 -1 -1 -1	104	-1 1 -1 0 -1 0 -1 -1 -1
47	1 0 0 0 -1 0 -1 -1 -1	105	-1 1 -1 0 -1 0 11 -1 -1
48	0 1 0 0 -1 0 -1 -1 -1	106	-1 1 -1 0 -1 0 12 -1 -1
49	0 1 0 0 -1 0 11 -1 -1	107	-1 1 -1 0 -1 0 13 -1 -1
50	0 1 0 0 -1 0 12 -1 -1	108	-1 0 -1 1 -1 0 -1 -1 -1
51	0 1 0 0 -1 0 13 -1 -1	109	-1 0 -1 1 -1 0 -1 21 -1
52	0 0 1 0 -1 0 -1 -1 -1	110	-1 0 -1 1 -1 0 -1 22 -1
53	0 0 0 1 -1 0 -1 -1 -1	111	-1 0 -1 1 -1 0 -1 23 -1
54	0 0 0 1 -1 0 -1 21 -1	112	-1 0 -1 0 -1 1 -1 -1 -1
55	0 0 0 1 -1 0 -1 22 -1	113	-1 0 -1 0 -1 1 -1 -1 31
56	0 0 0 1 -1 0 -1 23 -1	114	-1 0 -1 0 -1 1 -1 -1 32
57	0 0 0 0 -1 1 -1 -1 -1	115	-1 0 -1 0 -1 1 -1 -1 33
58	0 0 0 0 -1 1 -1 31	116	-1 0 -1 0 -1 0 -1 -1 -1

APPENDIX C

The complete set of balance equations represented by codes in a system of three dependent Hypo(2)/Hypo(2)/1 queues which follow the First Interaction Scheme for $\{P[0], P[1], P[2]\}$.

Appendix C, continued

Appendix C, continued

Appendix C, continued

Constant	h							Power														
-1	0	2	0	1	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
-1	0	2	0	1	1	2	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
-1	0	2	0	1	1	2	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
-1	0	2	0	1	1	2	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
1	2	2	0	1	1	2	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
1	0	1	0	1	1	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
1	0	2	2	1	1	2	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0
1	0	2	0	2	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1	0	2	0	1	2	2	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0
1	0	2	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
1*																						
-1	0	2	0	1	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
-1	0	2	0	1	2	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
-1	0	2	0	1	2	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
-1	0	2	0	1	2	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
1	2	2	0	1	2	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
1	0	1	0	1	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	2	2	1	2	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0
1	0	2	0	1	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
1	0	2	0	1	2	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
1*																						
-1	0	2	0	1	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
-1	0	2	0	1	2	2	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
-1	0	2	0	1	2	2	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
-1	0	2	0	1	2	2	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
1	2	2	0	1	2	2	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
1	0	1	0	1	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	2	2	1	2	2	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0
1	0	2	0	1	1	2	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
1	0	2	0	1	2	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
1*																						
-1	0	2	0	2	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
-1	0	2	0	2	1	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
-1	0	2	0	2	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
-1	0	2	0	2	1	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
1	2	2	0	2	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
1	0	1	0	2	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	2	2	2	1	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0
1	0	2	0	2	2	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
1	0	2	0	2	2	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
1	0	2	0	2	2	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
1*																						
-1	0	2	0	2	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
-1	0	2	0	2	2	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
-1	0	2	0	2	2	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
-1	0	2	0	2	2	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
1	2	2	0	2	2	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
1	0	2	0	1	1	2	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
1	0	2	0	2	2	2	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0
1	0	2	0	2	1	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
1	0	2	0	2	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
1*																						
-1	0	2	0	2	2	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
-1	0	2	0	2	2	2	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0
-1	0	2	0	2	2	2	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
-1	0	2	0	2	2	2	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
1	2	2	0	2	2	2	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0
1	0	2	0	2	2	2	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
1	0	2	0	2	2	2	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
1	0	2	0	2	2	2	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
1	0	2	0	2	2	2	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0
1*																						
-1	0	2	0	2	2	2	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
-1	0	2	0	2	2	2	2	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0
-1	0	2	0	2	2	2	2	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0
-1	0	2	0	2	2	2	2	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0
1	2	2	0	2	2	2	2	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0
1	0	2	0	2	2	2	2	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0
1	0	2	0	2	2	2	2	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0
1	0	2	0	2	2	2	2	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0
1	0	2	0	2	2	2	2	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0
1*																						

Appendix C, continued

Appendix C, continued

Constant	h						Power																
-1	0	2	2	1	0	2	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
-1	0	2	2	1	0	2	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
-1	0	2	2	1	0	2	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
-1	0	2	2	1	0	2	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	2	2	2	1	0	2	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	1	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	0	2	1	1	0	2	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1	0	2	2	1	2	2	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1	0	2	2	1	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1*																							
-1	0	2	2	2	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
-1	0	2	2	2	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
-1	0	2	2	2	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
-1	0	2	2	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	2	2	2	2	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	2	0	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	0	2	1	2	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1	0	2	2	2	1	2	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1	0	2	2	2	2	1	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1*																							
-1	0	2	2	2	0	2	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
-1	0	2	2	2	0	2	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
-1	0	2	2	2	0	2	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
-1	0	2	2	2	0	2	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	2	2	2	2	0	2	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	2	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	0	2	1	2	0	2	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1	0	2	2	2	2	2	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	0	2	2	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1*																							
-1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-1	1	1	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
-1	1	1	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
-1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	2	1	0	1	0	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	0	2	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	1	1	2	1	0	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1	0	1	0	2	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1	1	1	0	1	2	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1	0	1	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1*																							
-1	1	1	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-1	1	1	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-1	1	1	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-1	1	1	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1	0	1	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	2	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	2	2	0	2	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	1	1	0	1	2	2	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	1	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1*																							
-1	1	1	0	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-1	1	1	0	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-1	1	1	0	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-1	1	1	0	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	1	0	2	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	2	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	2	2	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	0	1	2	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	0	2	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1*																							

Appendix C, continued

Constant	h						Power												
-1	1	1	0	2	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
-1	1	1	0	2	0	2	1	0	0	0	0	1	0	0	0	0	0	0	0
-1	1	1	0	2	0	2	1	0	0	0	0	0	0	0	1	0	0	0	0
-1	1	1	0	2	0	2	1	0	0	0	0	0	0	0	0	1	0	0	0
1	2	1	0	2	0	2	2	0	0	0	1	0	0	0	0	0	0	0	0
1	0	2	0	2	0	2	0	0	0	0	0	1	0	0	0	0	1	0	0
1	1	1	2	2	0	2	1	1	0	0	0	0	0	1	0	0	0	0	0
1	1	1	0	1	0	2	1	0	0	0	0	0	0	1	0	0	0	0	0
1	1	1	0	2	2	2	1	0	1	0	0	0	0	0	0	1	0	0	0
1	1	1	0	2	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0
1*																			
-1	1	2	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
-1	1	2	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
-1	1	2	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0
-1	1	2	0	1	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0
1	2	2	0	1	0	1	2	0	0	0	1	0	0	0	0	0	0	0	0
1	1	1	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
1	1	2	2	1	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0
1	0	2	0	2	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0
1	1	2	0	1	2	1	1	0	1	0	0	0	0	0	1	0	0	0	0
1	0	2	0	1	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0
1*																			
-1	1	2	0	1	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0
-1	1	2	0	1	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0
-1	1	2	0	1	0	2	1	0	0	0	0	0	1	0	0	0	0	0	0
-1	1	2	0	1	0	2	1	0	0	0	0	0	0	0	1	0	0	0	0
1	2	2	0	1	0	2	2	0	0	0	1	0	0	0	0	0	0	0	0
1	1	1	0	1	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0
1	1	2	2	1	0	2	1	1	0	0	0	0	1	0	0	0	0	0	0
1	0	2	0	2	0	2	0	0	0	0	0	0	0	1	0	0	1	0	0
1	1	2	0	1	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0
1	1	2	2	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0
1	0	2	0	1	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0
1*																			
-1	1	2	0	2	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
-1	1	2	0	2	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
-1	1	2	0	2	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0
-1	1	2	0	2	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0
1	2	2	0	2	0	1	2	0	0	0	1	0	0	0	0	0	0	0	0
1	1	1	0	2	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
1	1	2	2	1	0	2	1	1	0	0	0	0	1	0	0	0	0	0	0
1	0	2	0	2	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0
1	1	2	0	1	0	2	1	0	0	0	0	0	0	0	1	0	0	0	0
1	1	2	0	1	0	2	1	0	0	0	0	0	0	0	1	0	0	0	0
1	0	2	0	2	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0
1*																			
-1	2	1	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
-1	2	1	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
-1	2	1	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0
-1	2	1	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0
1	1	1	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
1	2	1	2	1	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0
1	2	1	0	1	2	1	1	0	1	0	0	0	0	0	0	0	0	0	0
1	2	1	0	1	2	1	1	0	1	0	0	0	0	0	0	0	0	0	0
1	0	2	1	0	1	2	1	1	0	1	0	0	0	0	0	0	0	0	0
1*																			

Appendix C, continued

Constant	h							Power										
-1	2	1	0	1	0	2	1	0	0	0	1	0	0	0	0	0	0	0
-1	2	1	0	1	0	2	1	0	0	0	0	1	0	0	0	0	0	0
-1	2	1	0	1	0	2	1	0	0	0	0	0	0	1	0	0	0	0
-1	2	1	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0
1	1	1	0	1	0	2	1	0	0	1	0	0	0	0	0	0	0	0
1	2	1	2	1	0	2	1	1	0	0	0	0	0	1	0	0	0	0
1	2	1	0	1	2	2	1	0	1	0	0	0	0	0	0	1	0	0
1	2	1	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0
1*																		
-1	2	1	0	2	0	1	1	0	0	0	1	0	0	0	0	0	0	0
-1	2	1	0	2	0	1	1	0	0	0	0	1	0	0	0	0	0	0
-1	2	1	0	2	0	1	1	0	0	0	0	0	0	0	1	0	0	0
-1	2	1	0	2	0	1	1	0	0	0	0	0	0	0	0	0	1	0
1	1	1	0	2	0	1	1	0	0	1	0	0	0	0	0	0	0	0
1	2	1	2	2	0	1	1	1	0	0	0	0	0	1	0	0	0	0
1	2	1	0	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0
1	2	1	0	2	2	1	1	0	1	0	0	0	0	0	0	1	0	0
1*																		
-1	2	1	0	2	0	2	1	0	0	0	1	0	0	0	0	0	0	0
-1	2	1	0	2	0	2	1	0	0	0	0	1	0	0	0	0	0	0
-1	2	1	0	2	0	2	1	0	0	0	0	0	0	0	1	0	0	0
-1	2	1	0	2	0	2	1	0	0	0	0	0	0	0	0	0	0	1
1	1	1	0	2	0	2	1	0	0	1	0	0	0	0	0	0	0	0
1	2	1	2	2	0	2	1	1	0	0	0	0	0	1	0	0	0	0
1	2	1	0	1	0	2	1	0	0	0	0	0	0	1	0	0	0	0
1	2	1	0	2	2	2	1	0	1	0	0	0	0	0	0	1	0	0
1	2	1	0	2	0	1	1	0	0	0	0	0	0	0	0	0	1	0
1*																		
-1	2	2	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0
-1	2	2	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0
-1	2	2	0	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0
-1	2	2	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0
1	1	2	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0
1	2	1	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0
1	2	2	2	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0
1	2	2	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0
1	2	2	0	1	2	2	1	0	1	0	0	0	0	0	1	0	0	0
1	2	2	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0
1*																		
-1	2	2	0	1	0	2	1	0	0	0	1	0	0	0	0	0	0	0
-1	2	2	0	1	0	2	1	0	0	0	0	1	0	0	0	0	0	0
-1	2	2	0	1	0	2	1	0	0	0	0	0	0	1	0	0	0	0
-1	2	2	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	1
1	1	2	0	1	0	2	1	0	0	1	0	0	0	0	0	0	0	0
1	2	1	0	1	0	2	1	0	0	0	1	0	0	0	0	0	0	0
1	2	2	2	0	1	2	1	1	0	0	0	0	1	0	0	0	0	0
1	2	2	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0
1	2	2	0	2	2	1	1	0	1	0	0	0	0	0	1	0	0	0
1	2	2	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	1
1*																		
-1	2	2	0	2	0	2	1	0	0	0	1	0	0	0	0	0	0	0
-1	2	2	0	2	0	2	1	0	0	0	0	1	0	0	0	0	0	0
-1	2	2	0	2	0	2	1	0	0	0	0	0	0	1	0	0	0	0
-1	2	2	0	2	0	2	1	0	0	0	0	0	0	0	0	0	0	1
1	1	2	0	2	0	2	1	0	0	1	0	0	0	0	0	0	0	0
1	2	1	0	2	0	2	1	0	0	0	1	0	0	0	0	0	0	0
1	2	2	2	0	2	2	1	1	0	0	0	0	1	0	0	0	0	0
1	2	2	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0
1	2	2	0	2	2	2	1	0	1	0	0	0	0	0	1	0	0	0
1	2	2	0	2	0	1	1	0	0	0	0	0	0	0	0	0	0	1
1*																		

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